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MODIFIED ENTERPRISE PROGRAM

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GRADES III to VI

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JULY 1967

NORTHLAND SCHOOL DIVISION No. 61

	Grade III	Grade IV	Grade V	Grade VI
History	History of the North American Indian	Red River Settlement	Early Alberta History	Ancient Egypt
Economics and Social Life	Community Life Evolutionary process home to cities.	Metis Colony or Indian Reserve showing relationship to changing world.	Alberta Story of Industrial Development	Canadian Primary Industries Conservation
Geography	Europe - as origin of first white settlers and North America's various ethnic groups.	Life in a Mountain Region The Andean Civilization	Life on the Plains Compare Indians of Plains with Mongolia	Life in Coastal Regions - Indians in B.C. compare with New Zealand Maoris
Science and Technology	The Story of Clothing	Homes through the Ages	Travel Transportation and Communication	Contribution of Science to Social Progress in North America.

ENTERPRISE OUTLINE

Grade Three - Section A

The History of the North American Indian

ENTERPRISE

Grade Three - Section A

The History of the North American Indian

Objectives:

I. To emphasize the racial connections between the American Indians with the Old World peoples and to diminish the sense of isolation and separateness that may now be embedded in the minds of the pupils.

II. To help give an appreciation of the response of the American Indian to his environment, and to appreciate the climatic, cultural and material factors that influenced the development of North American Indian cultures.

III. To promote an understanding of the historic factors that have led to the disintegration of the Indian tribal societies and to the development of the present Indian and Metis position in society.

IV. To give to the pupils an idea of the contribution of their societies to the larger context of Canadian society by reference to the history and achievement of their ancestors and by discussion of present aspirations and views.

Understandings:

I. A knowledge of the history of the American Indians, their history and achievement.

II. A broad knowledge of the reasons for present white dominance of economic and cultural environment in Canada.

III. A knowledge of Indian contribution to the history of Canada.

Desirable Skills:

I. Ability to understand

(a) that on a globe the continents and oceans are represented.

(b) that the climatic variations in various locations during the four seasons have a simple explanation.

(c) that different climates produce different vegetation - tundra, grassland, forest, desert.

(d) that mountains are cooler than the lower land around them.

(e) that food, shelter and clothing are essential to human life.

(f) that different climate, animal and plant resources determine to a large degree the mode of life of human societies.

(g) that hunting and collecting economics promote a nomadic and loosely organized society due to a lack of stability in the food resources.

(h) that trade is due to two societies having mutually desired surpluses of goods, and that such trade affects both societies for good or ill.

(i) that geographic relations such as distance and direction may be represented on a sketch plan, a map or globe, while symbols may represent houses, rivers, mountains, etc.

II. To gain an understanding of the dimensions of time in a geological and cultural setting, in terms of fathers and grandfathers experiences, and in the written and archeological evidence of the past.

III. Pupils should also gain experience in making oral and written reports, in drawing and coloring pictures; in working both individually and collectively on related projects; and in finding and using information.

Overview:

The enterprise is concerned with tracing, as far as is known, the origins of the pre-Columbian Indians, in examining their responses to the physical environment, and then studying the impact made on Canadian Indians by the fur traders and settlers in historic times. Basically then the problem is "where are the Indians now, and how did they get there" in economic, cultural and environmental terms.

A time limit of six to eight weeks should be accepted for this enterprise, which may be modified in the later stages to deal with a particular Indian - Metis group, if adequate material can be located.

Motivation:

The pupils should have a natural concern in this unit, but additional interest may be aroused by film strips, films, displays of artifacts or pictures.

Evaluation:

Since it is not desirable that all pupils work on the same topics or at the same intensity, tests should deal with generalities rather than with specific details, but a common core of achievement should be present and should be therefore capable of examination and testing.

The following list of topics and related questions may offer a possible avenue of investigation: -

Topic	Related Questions
I. The Origins of the North American Indians	1. What physical characteristics are typical of the North American Indian?
	2. Which Old World races do they look like and in what respects?
	3. How can organic material be dated?
	4. How old are the earliest remains of man in the Americas?
	5. What climatic conditions prevailed in North America then?
	6. How could man have arrived in North America by land or sea?
	7. With what extinct animal remains are the early paleo-Indian remains associated?
II. The Mode of Life of the Paleo-Indian	1. How did these men find food? What were their weapons and how did they hunt and trap?
	2. What means did the Indian have of providing fire?
	3. Why did hunting tribes have to move frequently?
	4. What animals did the Indians domesticate?
	5. What animals were domesticated in the same period in the Old World, and how did this affect Old World societies? (- horses swift travel, superior hunting techniques, wheels, carts, chariots, trade; cattle, - ploughing; milk; sheep, - wool, etc.)
	6. Which plants did the Indians cultivate and in which areas?
	7. What is the effect of an assured supply of food on a migratory tribe - Allocation of Work - who digs, plants, harvests - relative permanence of residence, organization for government - war, relocation of villages, ownership of land?
	8. In what ways are copper or metal weapons superior to those of flint or bone? Does use of metal involve craft specialization and trade?

Topic		Related Questions
III. The Indian in Historic Times	1.	Distinguish between the Eastern Woodland Indians, living in villages and cultivating crops; the Northern Coniferous Forest Indian, living by hunting and trapping, travelling by canoe; and the Plain Indians, supported by the buffalo, living in relatively numerous tribal bands and dependent on the horse-buffalo economy.
Eastern Woodlands	2.	Who were the Iroquois, how were they organized, how did they affect the French/English wars?
	3.	How did the fur trade affect Indian economy - change to cash economy, use of steel traps, dependency on white trade goods - clothing, kettles, axes, etc., decline of native arts?
	4.	Did both Indian and trader benefit from this trade?
	5.	Describe the use of canoe, snowshoe in the fur trade.
	6.	Describe the methods of trapping, preparing skins and the use made of the skins.
	7.	What is the price of various furs now?
	8.	Is trapping an adequate way of life now? Why?
The Plains Indians	1.	From whence did the Indians obtain horses, and how did this affect hunting and war?
	2.	How were buffalo hunted, and what use was made of the various products?
	3.	How did an Indian become famous?
	4.	What was "wealth" to an Indian?
	5.	Did Indians "own" land individually or collectively; or did they just hunt over it?
	6.	What factors led to the buffalo being killed off - improved firearms, railroads, farms and ranches, demand for hides?
	7.	Was it possible that the herds of buffalo could have been preserved?
	8.	How effective were the Indians in war against the U.S. Army?
	9.	Why were there no Indian wars in Canada?

Topic	Related Questions
	10. How did the Indians communicate - sign language, smoke signals, etc.?
	11. What occupations do the Plain Indians engage in now - are they rich or poor?

PROBLEM I

WHERE THE INDIANS CAME FROM

Subject Area	Possible Procedure	Possible Activities
Art	Individual Projects	Draw a picture of an Indian - no direction or assistance.
English	Discussion	What features - colour of skin, hair, eyes, etc. do all Indians have? Find by elimination what other people look most like Indians. Use illustrations of others.
Science	Teacher	Explain - bones are found with a tree root growing through them - are the bones older than the tree or not? How is the age of the tree found?
		Bones of men and mammoths are found together, and the mammoth has a spear part in its ribs. Are the bones of the same age?
		Has anyone living seen a live mammoth?
		Discuss age determination by various methods to establish that man was in existence in the Old World prior to being found in America, and hence is likely to have migrated to America from elsewhere.
Art	Pupils	Draw and list extinct Pleistocene mammals.
Social Studies	Teacher	Draw a time line and indicate child's birth, father's birth, grandfather's birth, Confederation, C.P.R. Railroad, Columbus, birth of Christ, end of Ice Age, 30,000 B.C. (age of oldest organic remains indicating man's appearance in the New World), and illustrate with suitable photographs or pictures.

Subject Area	Possible Procedure	Possible Activities
Social Studies	Pupil Project	Draw sketches of village, town or settlement, putting in houses, lakes, streams and distances to nearest large towns. Locate sketch plans on map of Alberta, and map of Alberta on map of Canada and thence on the World globe or map. Find what part of Old World is nearest to New World and guess how man could have moved from one to the other. Eliminate false theories by discussion.

PROBLEM II

HOW INDIANS LIVED LONG AGO

Subject Area	Possible Procedure	Possible Activities
English	Group Projects	Report after discussion on how you could obtain food, shelter yourself, and make fire without any manufactured or purchased equipment - (use snares, deadfalls, nuts, berries, barks, sharp stones or bones, make fish hooks or nets).
	Perhaps adult Indians could help here - also survival articles in National Geographic	Explain that this is how the Old Indians lived before iron, matches, wool, cotton were used.
Art	Pupil Activity	Develop chart illustrating transport by land and sea - man pack, dog travois, horse travois, toboggan, cart, stagecoach, etc; use of caribou, elk, camel, yak, elephant, llama for carrying burdens and producing meat, milk, wool, etc; rafts, dugouts, canoes, yak boat, paddle wheel steamer, etc.
English	Pupil/Teacher Discussion and encyclopaedia research	Which animals of America are native to the continent and can be domesticated? Hence discuss why wheel not used in North America.
Health	Pupil/Teacher	Discuss foods eaten during week, and isolate domesticated plants - wheat, rice, corn, carrots, potatoes,
	Encyclopaedia research	etc. Find those native to America and the areas where they were grown.

Subject Area	Possible Procedure	Possible Activities
Social Studies	Group Project	On map of world, list plants grown in major continents and native to them. Emphasize that American Indians domesticated plants of major importance to world food and drug resources.
Social Studies	Discussion	Establish by question and answer that: 1. If plants are cultivated, they must be tended. 2. Harvest must be protected from animals and other tribes. 3. Permanent residence of part of tribe near fields is essential. 4. Food surplus must be stored and preserved. 5. Soil is exhausted if cropped yearly without manure. 6. Villages must then move every 5 - 10 years to fresh fields. 7. With food supplies assured, men have leisure for war, and women for other leisure pursuits - sewing, beadwork, pottery, etc. 8. Decisions about moving or war require chiefs or kings or a ruling council to decide and decision is binding on all tribe, or it would disintegrate. 9. Surpluses may be used for trade with neighbors.

PROBLEM III

THE INDIAN SINCE THE WHITE MEN CAME

Subject Area	Possible Procedure	Possible Activities
Social Studies	Group Project	On a large map of Canada, colour East Woodland Plains and Northern Coniferous Forests. In each area, glue pictures of typical animals, typical trees, typical Indians, typical mode of travel in summer and winter.

Subject Area	Possible Procedure	Possible Activities
		Eastern and Northern Canada, display actual or model snowshoe and toboggan, tipi, moccasins and other local products relating to Indians or to Indian mode of life.
English	Individual Project or Invite Experienced Adults to describe	Essay and sketch illustrating trapping particular animals, or hunting in the present or past.
	Teacher	Fur traders wanted furs. Why?
		What did the Indians desire in exchange that they could not provide for themselves? Discuss prices of H.B.C. products in present and past in terms of pelts.
		Discuss fur conservation with reference to local practices and registered trap lines.
	Class Map	Relate this to exhaustion of fur in Eastern Canada, and to tribal movements (Cree, etc.) and to exploration of the North West.
English	Teacher	Read a description of buffalo hunt by Indians.
Art	Pupils Mural	Draw buffaloes, horses, Indians, tipi, etc., and mount on a large mural.
	Teacher Pupils	Describe "coup" system. Draw Indian with headdress to indicate what his deeds were in war. Label appropriate feathers with system of values of decorations.
	Teacher	Discuss coming of railroads, settlers, etc., on horse-buffalo Indians. North America may have supported two million Indians. It now supports two hundred million people. Was this possible without killing off buffalo?
	Class Discussion	Did Indians "own" land? - Had whites equal or less right to it than Indians?

Subject Area	Possible Procedure	Possible Activities
		If Indian had better right, should not Crees move back to Ontario, Sioux to Minnesota and Eskimos to Siberia as well as English to Denmark, and Germans to Southern Russia? Establish by reason that the process of movement of people is irreversible.
	Pupil Project Research	Write a tale about the life of famous Indians.

PROBLEM IV

THE INDIAN OF TODAY AND OF THE FUTURE

Subject Area	Possible Procedure	Possible Activities
Social Studies	Indian Superintendent or Colony Supervisor	Explain nature of reserve or colony, its bounds and its purpose, and the number of Indians and Metis in Alberta and rate of growth of population. Discuss reserve or colony as an adequate source of subsistence and employment in simple terms.
	Discussion - local adults and children	Discuss difficulties or ease of Indian and Metis getting jobs off reserve or colony. What ideas have they for improvement of lot of Indian and Metis?

Culmination

Display of material on achievements of Indians-artifacts, food, travel, notable personalities. Invite local populace and other classes to view. Children explain exhibits.

ENTERPRISE OUTLINE

Grade Three - Section B

The Community Process from Homes to Cities

The Evolution of a Community - Settlement to City

ENTERPRISE

Grade Three - Section B

The Evolution of a Community - Settlement to City

Objectives:

I. To gain an understanding of the fundamental environmental factors that cause settlements to be located in certain places.

II. To realize the importance of economic factors - resources and communications that cause some small settlements to expand into towns and cities.

III. To understand that cities in general expand by drawing their populations from rural areas, which tend to become depopulated and to lack those facilities found in larger communities.

Understandings:

I. That villages do not grow into cities unless certain resources are available.

II. That cities depend on producing, manufacturing and transporting goods to other areas.

III. That services available in cities are supported by the taxation of a concentrated population.

IV. That lack of some services in smaller communities is economically inevitable.

Desirable Skills:

I. Ability to draw maps and plans with some understanding of scale, direction and use of symbols.

II. Ability to draw and colour pictures.

III. Ability to give short oral and written reports.

Motivation:

All children have an interest in their own communities; pictures contrasting the buildings in a village and a large city (say Edmonton) and a picture of Edmonton one hundred years ago should stimulate some questions about why Edmonton grew while other communities did not.

Evaluation:

In Grade III evaluation would be in view of:-

I. Neatness in writing and colouring.

II. Ability in Art work.

III. Questions on local sources of income and occupations.

local building materials.

local services.

local transportation.

compared with those of another larger community.

The following list of topics and related questions may offer a possible avenue of profitable investigation:-

Topic I	Related Questions
The conditions necessary for a permanent settlement	1. Primitive man, dependent on hunting and collecting economy rarely established permanent settlements. Why? 2. B.C. coastal Indians had permanent settlements at the mouths of rivers. Why? 3. What conditions are then necessary for permanent settlements -- assured sources of food, supply of water, building material; fuel for heating and cooking? 4. Which of these conditions are found in the pupils' home settlement? Investigate water, fuel, buildings, food supply and economic basis of settlement-- trapping, fishing, logging, farming, railroading. Is food mainly locally obtained or imported, etc?

Topic II	Related Questions
Why have some settlements developed in Canada into large cities?	1. If a large city is arbitrarily defined as having a population of over 250,000, how many such cities are found in Canada? Locate these on a map. 2. What can be deduced from their location? (a) How many are located on rivers? (b) How many are located on the coast or can be reached by ocean going ships? (c) How many are located north of 55°? Why is this? (d) Are any located in mountain areas? (e) Are all these cities connected by railroads - did the railroad cause villages to grow into cities or did the railroad merely follow the growth of the city - as in Europe?

Topic III	Related Questions
The Characteristics of Cities	1. Cities have an organized pattern of building based on road construction to permit an orderly development of (a) water, sewage and lighting systems. (b) electrical and gas services. (c) transit systems. 2. Cities prescribe standard and locations of buildings (zoning) for different purposes to control. (a) fire hazards. (b) public health (garbage, pollution). (c) property values. (d) unnecessary duplication and extension of services such as schools, buses, police, fire, etc.

3. (a) Cities are supported by an economic hinterland where population and primary resources are concentrated as farming or ranching, logging and mining, etc.

(b) Cities in general support their populations by
   (a) manufacturing primary products as wheat - milling, brewing, etc.
   lumber - plywood, lumber, furniture, pulp, etc.
   ores - refining, extracting, fabricating.
   oil - refining, processing.
   (b) providing distribution services - by rail, road, air and sea.

   (c) Providing services to residents - road building, schools, police, fire, local government, stores, post offices, banks, hotels, buses, hairdressers, lawyers, cinemas, bowling alleys, parks, etc. (community helpers)

   (d) Cities draw their populations from rural areas and from other cities and centres by
      (a) offering higher wages than other areas.
      (b) by offering better living conditions.
      (c) by offering superior services and this reduces the population in rural areas where improved mechanical techniques (tractors, electric power) replaces the loss of man-power.

Topic IV

Study the Growth and Development of a Canadian City and Contrast this with the Local Settlement Prospects

Related Questions

Edmonton

1. When was it founded - for what purpose?
2. What did it look like in 1870?
3. What conditions - resources helped its expansion - logging, farming, oil, manufacturing, water, climate, railroad, flat terrain, navigable river, etc.?
4. What services does it offer that are not available locally - why?
5. Contrast with local settlement item for item.

PROBLEM I

WHY PEOPLE LIVE IN ONE PLACE?

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher/Pupil Question and Answer	1. Suppose the local store burned down, all cars, trucks, planes and railroads stopped working, how would you live - derive answer that people would have to disperse, live by hunting, trapping and fishing and abandon settlement.
	Group Project	2. Make a list of homemade substitutes that could be used for manufactured articles - knife-stone splinter or bone gun - bow and arrow, cross-bow, spear nets - roots or bark fibres shoes - moccasins stove - open fire, kettle - skin and stone boiling
	Report by pupils assisted by teacher questions	3. Settlements depend on assured supply of food, shelter, clothing, water, which can rarely be provided by a hunting and collecting economy. Assured supplies of food must depend on domesticated animals, agriculture or on importation of such supplies, in exchange for goods or services.

PROBLEM II

WHY DO SOME VILLAGES GROW INTO LARGE CITIES?

Subject Area	Possible Organization	Possible Activities
Art	Group Mural	Draw a city street scene and label those features found in cities that are not found locally - streets, policemen, traffic, cinemas, banks, stores, sidewalks, traffic buses, cars, airports, railroads.
Social Studies	Map work - either wall map or atlas	What symbol indicates a city on the map of a given size? Which are the larger cities in Canada - say of 250,000 or more people?

Class Chart

Name of City	Population	On Coast	On River or Lake	On Railroad	On Flat or Hill Country	In North or South
Quebec		**Yes**	Yes	Yes	Flat	South
Montreal		**No**	Yes	Yes	Flat	South
Toronto		No	Yes	Yes	Flat	South
Winnipeg		No	Yes	Yes	Flat	South
Regina		No	Yes	Yes	Flat	South
Edmonton	320,000	No	Yes	Yes	Flat	South
Calgary		No	Yes	Yes	Flat but near mountains	South
Vancouver		Yes	Yes	Yes	Flat but near mountains	South
Add other items as considered useful.						

Discussion

Why are all large Canadian Cities
(a) near fresh water?
(b) in the south?
(c) built on flat land?
(d) on a railroad, etc.?
and thus establish the pre-conditions of growth.

PROBLEM III

WHAT THINGS HAPPEN WHEN MANY PEOPLE LIVE IN ONE PLACE?

Subject Area	Possible Organization	Possible Activities
Social Studies	Class project	Make a list of people working and living in cities and divide them into classes.

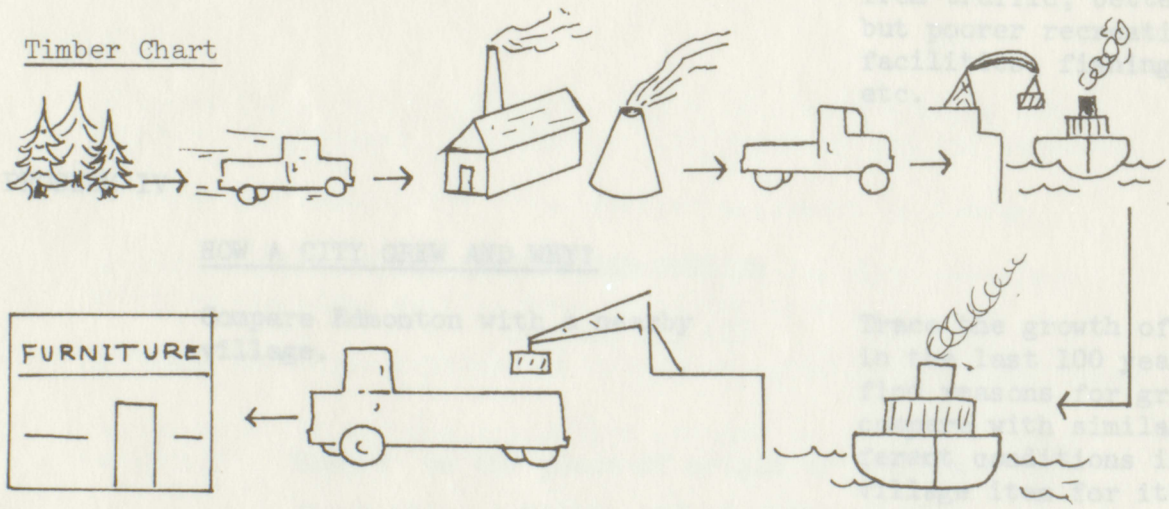
Office Workers	Manufacturing Raw Materials	Public Services	Private Services
Clerk	Construction	Fireman	Doctor
Typist	Cat driver	Policeman	Dentist
File Clerk	Engineer	Postal	Hairdresser
	Chemist	Teacher	Storekeeper
		Taxation	
		Health	
	etc.	Road Repair	

add suitable illustrations to the chart.

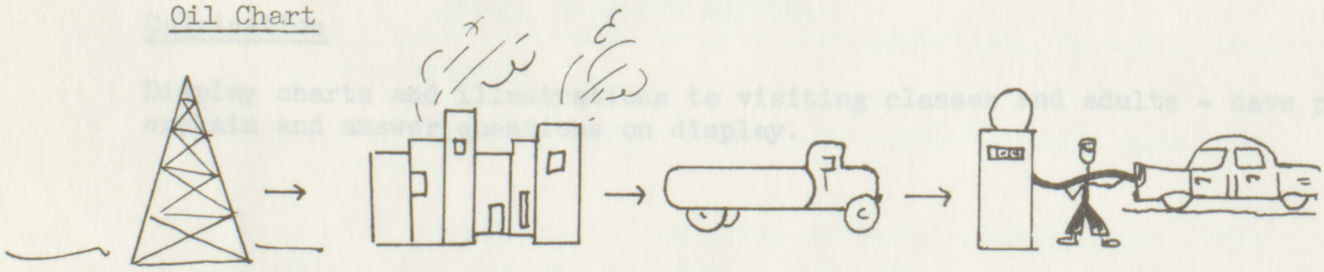
Health English	Pupil/Teacher Discussion	Establish that a city is not just an expanded village by reference to need for road buildings, sewage, power, fuel, transit, garbage, schools, police, fire services, government.

Subject Area	Possible Organization	Possible Activities
Social Studies	Group Project flow charts on primary- secondary industry	What is grown, mined or caught in Canada.

Timber Chart



Oil Chart



Construct flow charts for lumber, oil, wheat, fish, etc. showing the need for manufacturing and processing - done in cities and needing (a) people, (b) power, (c) water, (d) communications for export and transport of finished goods. Derive in the flow charts, the diversified products from raw material.

e.g. wood - pulp, plywood, furniture, houses, plastic, filler, cattle food, etc.
wheat - flour, brewing and distilling, food mixes, breakfast cereals, etc.
fish - drying, salting, canning, freezing, fertilizer, oils, etc.

Social Studies	Discussion and Pupil Short Notes	Where do the city people come from and why? (In general establish that they come from rural areas to better their living conditions.)
	Pupil Lists or Essays	What things are better in a city than in a village, and

Subject Area	Possible Organization	Possible Activities
		vice versa, e.g. better medical care but danger from traffic, better schools but poorer recreational facilities, fishing, hunting, etc.

PROBLEM IV

HOW A CITY GREW AND WHY?

Compare Edmonton with a nearby village.	Trace the growth of Edmonton in the last 100 years - find reasons for growth and compare with similar or different conditions in nearby village item for item.

Culmination

Display charts and illustrations to visiting classes and adults - have pupils explain and answer questions on display.

ENTERPRISE OUTLINE

Section III (C)

EUROPE as the place of origin or America's first white settlers and of major ethnic groups of North America.

ENTERPRISE

SECTION III (C)

Europe as the place of origin of America's first white settlers and of the major ethnic groups of North America

OBJECTIVES:

1. To learn about the homeland of certain of Canada's major ethnic groups - the French, the English, the Russians and the Italians.

2. To learn the reasons for these groups' migration to Canada.

3. To learn how the resources and climates of the home countries affected clothing, architecture and industries.

4. To learn how white settlers in Canada adjusted to new conditions.

5. To learn of the distinctive skills brought to Canada by these immigrants.

UNDERSTANDINGS

1. That men, women and families have left their homes in other lands to become Canadians.

2. That early pioneers, having faced much hardship, have developed modern Canada.

3. That material progress is dependent on mental and physical energy of the peoples applied to natural resources.

DESIRABLE SKILLS

1. Ability -

   (a) Locate on a map the continent and countries of Europe.

   (b) Locate information in indexes and reference books.

   (c) Give oral reports.

   (d) Draw, color and write neartlyand accurately.

   (e) To make charts and diagrams to illustrate facts.

OVERVIEW

This enterprise allows only of a rapid survey of the geography, industry and the history of perhaps four European countries. It should be related to the major immigration movements into Canada, especially:

   (a) The French in the 17th century

   (b) The British in 1784 (United Empire Loyalists)

   (c) The British after 1815

   (d) General migration post 1886 (settlement of the prairies)

   Russians, Italian, period 1918 - 1928
   Norwegian, etc. post 1945

and should make some reference to certain economic activities in Canada such as

The Fur Trade (1600 - 1850)

Settlement of the Prairies (1886 - 1930)

The growth of Industry (1914 - 1966)

MOTIVATION

A short period could be devoted to displaying posters and pictures of Europe or on showing films, or by the teacher, if not Canadian born discussing what life was like in his old country and how different he finds life in Alberta.

EVALUATION

A heavy load of factual information cannot be expected from Grade III children, nor is rote memorization of data particularily desirable.

Evaluation should be concentrated on neatness and accuracy of work done (especially writing, spelling and art work) and in terms of participation in group work.

General geographic skills may be tested objectively.

The following list of topics related questions may offer a possible avenue of investigation:-

TOPIC	Related Questions
1. Who are the Canadians	1. What was the population of Canada 100,000 years ago? 1000 years ago? How? 2. Where did all these people come from? 3. Why are Canadians overwhelmingly of European ancestry? 4. What brought these people to Canada - was Canada more attractive climatically? Was it easier to obtain wealth here than in Europe? Was it discontent with life in Europe? 5. How is it that migration to Canada has proceeded in spurts rather than in a regular flow? 6. Which countries supply or have supplied substantial numbers to the Canadian population? France, England, Germany, Russia, Italy, etc. 7. Which countries shall we study in this enterprise?
2. What is France like?	1. Where is France, Is it north of south of Canada? 2. What natural features form its borders? 3. What are the main natural features of France? mountains, rivers, plains plateaux. 4. What are the resources of France, soil, water power, iron, coal and bauxite. 5. When and why did the French come to Canada and what sort of industries did they find there? 6. What sort of things are grown in France. 7. What sort of things are made in France? 8. What sort of food is eaten in France? 9. How do people dress in France.

3. What is England Like?

1. What are the boundaries of England?

2. Is it North or South of Canada?

3. What is the climate like?

4. What are the main physical features - plains, rivers, hilly areas?

5. What are the resources of England? soil, iron, coal, clay (for pottery) fisheries.

6. When was migration of the English to Canada most pronounced?

   (a) United Empire Loyalists 1784?
   (b) After Napoleonic wars (depression)
   (c) When the railroad opened
   (d) After World War II (Industrial and professional)

7. What were conditions in Canada for these five successive waves of migration?

8. What are the main industries of England?

   (a) Light and heavy engineering
   (b) Glass and pottery
   (c) Textiles and clothing
   (d) Distilling and brewing

9. What crops are grown in England and which are imported, and why?

10. How does Britain support such a high density of population in comparison with Canada?

11. In which ways is the English language different from the Canadian language?

12. What difference could any Canadian pupil notice most if he were in England - games, clothes, transport dress, etc.

4. What is Italy like?

1. Where is Italy, north or south of Canada?

2. What are the main geographical features, mountains, plains, rivers?

3. What are the main resources of Italy? soil, hydroelectric power, minerals.

4. How long has Italy been a country? (after Roman times not till 1870)

5. Why is Southern Italy so much poorer than northern Italy - erosion and soil exhaustion in south.

6. Are Italian migrants likely to be from the north or the south?

7. What are the crops of northern and southern italy - rice, wheat, grapes corn, etc.

8. What are the industries of Italy - ships, light and heavy engineering, textiles, electrical goods, foods, etc.

9. How would an Italian school child find Canada different to his own country? In weather, clothing, food, housing and language, etc.

5. What is Russia Like?

1. What is the size of U.S.S.R. compared to that of Canada?

2. What are the boundaries of the U.S.S.R.?

3. Which part of the U.S.S.R. is Russia proper?

4. What are the main physical and vegetation features of Russia - plains, rivers, forests, prairies.

5. What are the main resources of Russia - soils, forests, iron coal, other ores, precious metals, oils, gas, fisheries.

6. Why did the Russians migrate in the period 1880 - 1914 and not before and not much since?

7. If Russians were to migrate to Canada which areas would most resemble their home-land?

8. What are the chief crops of Russia?

9. What are the chief industries of Russia?

10. What is meant by "collective farming" and how does it differ from Canadian practice?

11. What things would a Canadian pupil find strange if he moved to Russia - housing, clothing, transport, games etc.

6. In what ways has Canada benefitted from these immigrants:

1. What was the French contribution to:
   - The fur trade
   - Exploration
   - First industries
   - First farming enterprises.

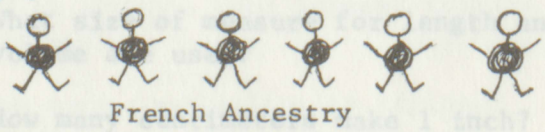
2. What was the English contribution to:
   - the fur trade
   - exploration
   - settlement of the prairies
   - exploration of the West
   - financial resources
   - establishment of industries

3. What was the Italian contribution to:
   - the farming industry
   - industry in Canada

4. What was the Russian contribution to:
- exploration and settlement of the west coast
   - farming in the prairies
   - wheat selection for use in prairies.

PROBLEM I

Who are Canadians

Subject Area	Possible Procedure	Possible Activities
Social Studies	Teacher Introduction	Prepare a chart showing population of Canada in 1750, 1800, 1850, 1900 1950.
	Class Activity	Prepare chart, with outline of man representing 1 million people to show ethnic breakdown of Canada's present population. e.g.  French Ancestry Locate the home countries on a map. From which continent have most of these people come.
	Class Discussion	Why have people come to Canada? Invite persons born in Europe to discuss reasons for migration. Discuss with class the following: (a) Difficulty of owning land in Europe owing to lack of space (b) Better living conditions (c) More opportunities for sports and recreation. (d) Higher salaries.

	Teacher Presentation	Why little French migration after 1760? Why little Russian migration after 1914? Why has migration to Canada been uneven - economic conditions in Europe, unemployment, prosperity.

PROBLEM II

What is France Like

Subject Area	Pupil Research Orientation	Possible Activities
Social Studies		How far from Canada is France by sea and by Air? How many times roughly can the area of France go into the area of Canada? Which is the highest French mountain? What are the largest French towns? What oceans, rivers, mountains and seas form the boundaries of France? How many people live in Franch - is this more or less than the number of people who live in Canada? What kind of money is used in France? What is the value of the franc? What size of measure for length and volume are used? How many centimeters make 1 inch? How many pints in 1 litre? What language is used in France? Draw the French Flag.
Music	Class Activity	Learn one or two French songs. Point out that a variant of French is spoken in Quebec, but it resembles 18th century French somewhat - why is this?
	Discussion and class notes	Obtain posters of France from the French information offices. What things are shown in the pictures that show that the pictures are not of Canada?

	Probably	Dress of children, policemen, styles of architecture, trees, crops grown, public transport, evidence of great Age in buildings, winding roads, etc.
	Teacher Presentation	The main industries of France - light and heavy engineering, textiles, luxury goods (clothes, perfumes) wines, wheat, etc. with reference to the basic resources - iron ore, coal hydro electricity, soil, climate. Are these goods produced in Canada? What does France sell to and buy from Canada?

PROBLEM III

What is England Like?

Subject Area	Possible Organization	Possible Activities
Social Studies	Pupil research orientation	How far is it from England to Canada? In what direction? How many times will the area of England go into the area of Canada? Which is the highest English mountain? Which is the longest English river? Which are the four largest English cities? How many people live in England? What oceans, seas, channels and countries form the border of England?
Mathematics	Teacher Presentation	What kind of money is used in England? Change pounds to dollars and cents and vice versa. Show the difficulty of adding and subtracting in £, s, d compared with $ and ¢.
English	Teacher Presentation	Discuss difference between English and Canadian vocabulary - truck and lorry trunk and boot windscreen and windshield babybuggy and perambulator cookie and biscuit, etc.

Games		Teach the elements and rules of cricket and football.
Music		Learn some English songs and nursery rhymes "London Bridge is falling down", etc.
Social Studies	Teacher Presentation	Use a resource map to locate major coal fields and industrial areas of England - e.g. (a) London, light and heavy engineering food processing, import and export shipping. (b) Yorkshire - wool (why) (c) Lancashire - cotton (d) Midland - cars, trucks, aircraft, etc (e) Sheffield - steel (f) Hull, Grimsby - fishing (g) Staffordshire - pottery
Social Studies	Chart	On a map of England, locate pictures of materials produced in each area.
History	Discussion of pictures	From suitable pictures or sketches, discuss - (a) Castles - who built them, when and why (b) How completely man's works dominate the country - no large game, little natural vegetation, size of towns no land free to homesteads traffic congestion.
Social Studies	Teacher presentation	What Canada imports from England and what goods England imports from Canada
Art	Pupil Activity	Draw and color the English flag Draw and color pictures of English houses or castles.

TOPIC IV

Italy could be similarily treated.

TOPIC V

Russia could be similarily treated

TOPIC VI

In what way has Canada benefitted from these immigrants

Subject Area	Possible Organization	Possible Activities

The French Immigrants

The class work should be directed briefly to the following areas:

1. The fur trade in Canada from 1600 - 1760
2. French explorers, Radisson, La Verondrye, etc.
3. The work of Talon in organizing industry in New France.
4. The fact that Canada has two official languages representing the main stream of Canadian culture - maps, pictures and sketches should be freely used.

THE ENGLISH IMMIGRANTS

Class work should be focused on:

1. The fur trade under the Hudson Bay Co. and Northwest fur Company
2. Major explorers - Hearne, Kelsey, Pond, MacKenzie, Fraser.
3. The settlement of the prairies - the C.P.R., etc.

THE ITALIAN IMMIGRANTS

Class work should be focused on

1. The Italians in the wine industry and in truck farming and as industrial workers.

THE RUSSIAN IMMIGRANTS

Class work should recognize:

1. The importance of Russian wheat (frost resistant)in prairie farming.
2. The settlement of the prairies by Russian farmers who were experienced in similar conditions in their homeland.

CULMINATION

A Discussion on "What makes a Canadian"

Is it being born in Canada

or earning a living in Canada

or liking Canada

or what?

ENTERPRISE OUTLINE

SECTION III D

THE STORY OF CLOTHING

ENTERPRISE OUTLINE

SECTION III D

THE STORY OF CLOTHING

OBJECTIVES:

I. To learn of the history of clothing fashions and materials.

II. To learn how to take care of various fabrics.

III. To learn how various fabrics have peculiar properties that are utilized for warmth, coolness, protections and decoration.

IV. To learn something of the growth and processing of various fabrics and materials used as clothing.

V. To learn of the various styles, fashions and materials used in different parts of the world and at different times.

UNDERSTANDINGS:

I. That clothing styles vary from place to place and from time to time.

II. That artificial fabrics are lessening man's dependence on animal and vegetable fibres.

III. That persons are to some degree judged by the neatness and appropriateness of their dress.

DESIRABLE SKILLS

I. To locate on the map the home area of various people in national dress.

II. To draw and colour.

III. To give oral reports.

IV. To write clear reports.

V. To increase the working volabulary of pupils.

VI. To locate facts in reference books.

OVERVIEW

The enterprise should trace the development of clothing from animal hides to artificial fibres rather briefly and then centre around the following aspects of clothing.

(a) Distinctive clothing of national or climatic zones.

(b) Distinctive clothing of selected occupations.

(c) Care of clothes and appropriate styles for various occasions - school, work clothes, etc.

MOTIVATION

Motivation could develop from pictures of styles of clothing in the past - one hundred or more years ago, or by a picture display from which children could recognize either occupation or nationality of the wearers.

EVALUATION:

In Grade III evaluation would be in terms of activity in discussion and group work; on skill in written and oral reports; and on factual material such as identifying national costumes and the properties of various fibres.

The production of identical, memeographical and coloured pictures with common written content is not an essential part of the Enterprise program.

The following list of topics and related questions may offer a possible avenue of investigation:

Topic I

Of what materials are clothes made?

1. What are the purposes of clothing - protection from weather or working conditions, modesty, decoration.
2. In what part of the world did clothing likely develop - (colder climates)
3. What materials were available for clothing in these climates (skins).
4. How are skins processed so al to be suitable for clothing - (tanning or otherwise softening the hide)
5. How could skins be manufactured to fit the wearer - (cutting and sewing - hole boring and use of thongs)
6. What tools were needed to obtain and make skin clothing (killing or trapping equipment, cutting blades, scraping blades, piercing blades)
7. In some countries even yet, both skirts covering both legs, and trousers covering each leg separately are used as clothing e.g. Burma and Europe. Why did some people adopt trousers? (trousers allow more activity body movement, essential for horse riding, better adapted to cold weather.)
8. Many hides are covered with wool or hair. How is this used without the skin of the animal? (either by felting in hot water or by spinning into thread and weaving)
9. What makes some fibres suitable for felting? (hair has projections which interlock as wool, beaver hair, camel hair, etc.)
10. What vegetable fibres can be woven into cloth?
11. What other materials are used for making clothing? (silk, rayon, nylon, acrilon and other synthetics.)

TOPIC II

What is the history of clothing

A country should be selected which illustrates rapid change in clothing as for example any land of Western Europe - but China is unsuitable as it has a long history of relatively unchanged dress.

1. What changes are noticeable at intervals of two hundred years in England from A.D. 0 to A.D. 1965. The following trends should be noted for men and women:

Ancient Britons
Roman toga
Saxons
Normans
Armoured Knight of 12th century
Elizabethian dress - trunk hose
Georgian dress - wigs and breeches
Victorian
Modern dress

In the program, it should be noted how:

Breeches evolved into trousers.
Ladies skirts alternated between narrow and full styles.
Modern dress emphasizes comfort and freedome and ease of keeping clean, and an increasing uniformity between the dress of various social classes.

Note also
No right or left shoes before 17th century
Silk stockings in 16th century
Trousers uncreased before 1900
Swords worn on left side.
Use of pattens to keep clothes out of the street mud and dirt to 18th century.
Use of wigs 1600 - 1800
Use of machinery in clothing industry - Arkwright, Hargreaves, etc.

TOPIC III

What are synthetic fibres and how are they more suitable for certain purposes than natural fibres.

1. How is rayon made - relate to silk and wasp's nests - derived from action of enzymes on vegetable fibres.

2. Can you collect specimens of various fibres - what are these properties.

3. Collect wool, cotton, rayon, nylon, rubber.
Which is most easily dyed.
Which burns most easily.
Which absorbs water most
Which is cheaper per square yard
Which wears longest
Which is warmest
Which is coolest
Which resists acids best
Which can be most easily torn
Etc.

TOPIC IV

Which clothes are distinctive of particular occupations?

1. Soldier

Sailor
Policeman
Postman
Priest
Nurse
Doctor (on hospital duty)
Fireman

TOPIC V

Which clothing syles are distinctive of a country or a climate?

Scots
Eskimo
Chinese
Japanese
South Sea Islander
Indian
Moslem

What styles of footwear are appropriate to climates and occupations

Sandals
Snow shoes
clogs
Moccasins
Spiked boots
Rubber boots
Skiis

TOPIC VI

What style of clothing is appropriate in Canada at varying times and places

1. For summer
winter
school
games
visits to cities
parties, etc.

TOPIC VII

How should clothing be cared for

Which can be boiled?
Which can be washed in cold water
Which should be dry cleaned
Which should be machine washed
Which should be hand washed
How can stains be removed
Which can be darned or patched
How often should various garments be changed
What should be looked for in selecting shoes
Which materials are attacked by moths?

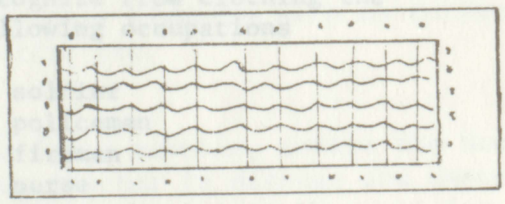
PROBLEM I

OF WHAT MATERIAL ARE CLOTHES MADE

Subject Area	Possible Oranization	Possible Activities
Science	Class Chart	Collect pieces of raw hide, fur, leather, wool, silk, rayon felt, asbestos cloth, rubber cotton, nylon, acrilan, etc. Label these by name, and classify as animal, vegetable or synthetic fibres.
English	Group Activity	Divide the class into research groups with one of the above materials as a topic. Each group will find out: a) What is the raw material (hides, flax, silk worm, latex, cocoons, etc.) Where are these fibres grown or made? How are they cultivated (cotton, flax) or bred(Merino sheep). Indicate production areas on world maps. b) How is it processed to make the fibre (or the material in case of rubber or non fibrous material) c) When was this material first used as clothing. d) What kind of clothing is the material best suited for - shirts dresses, stockings, hats, foot-wear, underclothes, work clothes, rain wear. e) For what purposes is the material unsuitable (fur in summer, cotton in winter, etc. Groups give oral or written report.
History	Discussion	1. What do we wear clothing for? a) Protection from cold or injury from stones, branches, projections. b) To indicate occupations - uniforms. c) For personal modesty d) For display purposes Collect pictures to illustrate these points.

PROBLEM II - The History of Clothing

Art	Pupil or Group Research	Probably best tackled by making a dozen or so outline figures of men

		and women, and gluing them at appropriate intervals on a time scale, then cutting out paper garments appropriate to men and women in Stone Age, Ancient Britain, Roman Britain, Viking, Norman, Medieval Tudor, Georgian Victorian and Modern dress. Do not neglect development of body armour as a form of protective clothing. Appropriate notes and peculiarities of dress should be written, and development of significant dress - trousers, etc., should be traced.
Art	Individual Work	Pupils should weave wool on a cardboard frame, using darning needles and wool as below:  Children should also darn a hole in a sock to illustrate practical use of weaving in the home, or alternatively patch a garment.
Science	Teacher Presentation	The teacher should show the children specimens of wool, fur, felt, nylon under a microscope and the pupils could draw and discuss the difference between fibres.
History	Teacher Presentation	Discuss the history of mechanization in the clothing industry - spinning jenny, mule water frame, etc.

PROBLEM III

What are the Synthetic Fibres and for What Purposes are they suited

Science	Teacher Presentation	Discuss silk production from silk worms - mulberry culture, cocoons, unwinding in hot water, weaving - history in China - brought to Europe in Middle Ages Discuss spiders producing webs.
Science	Class Actitities and Experiment	Collect specimens of artificial and natural fibres in cloth. - wool cotton, linen, silk, nylon, orlon rubber, fibreglass, etc. Find out: Which can be boiled without harm Which resists dilute HCl acid Which soaks up water best.

		Which is waterproof Which is cheapest - wool, cotton or nylon shirt or pullover Which is warmest Which can be dyed most easily Which is most easily torn. and other experiments as suggested by the circumstances and materials available.
English	Research groups	Report on how rayon, orlon, nylon and rubber are made.

PROBLEM IV

What clothing is distinctive of a Particular Profession or Occupation

Social Studies	Teacher Presentation of pictures or sketches	Recognize from clothing the following occupations a) soldier b) policeman c) fireman d) nurse e) doctor (in hospital) f) priest g) sailor, etc. But also discuss the reason for the various items of clothing - protection, cleanliness, uniformity, appearance or utility, of the various items of dress. Emphasis is not on recognition but the occasion for the dress.

PROBLEM V

What Clothing Styles are Distinctive of a Country Climate

Treat as Problem IV with reference to Scots, Eskimo, Chinese, South Sea Islands, Indian, Arabs, etc. Do not emphasize Dutch clogs or other forms of dress which are essentially archaic and not in daily use.

Treat distinctive footwear or head dresses similarily -

Sandals, snowshoes, clogs, moccasins, spiked loggers boots, skis, etc. both as distinctive of a climate and as a basis for discussion as to why they are appropriate to certain conditions.

PROBLEM VI

What Styles of Clothing are Appropriate in Canada
In Varying Times and Places

Subject Area - Social Studies

In most schools of this division it would be inappropriate to discuss polishing shoes, clean shirts and ties, and pressed clothes at great length. It may be better to discuss clothing that is suitable for cold and warm weather, or for other special purposes.

PROBLEM VII

How should Clothing Be Cared For

Subject Area	Possible Organization	Possible Activities
Health	Teacher Presentation	Discussion of need for cleanling clothing - it is soiled by sweat, contact with other surfaces, atmosphere dust, gathers germs and becomes unpleasant to wear. Cleaning can be by washing, sponging, brushing, dry cleaning using hot or cold water detergents, soap, or other cleaners such as Fullers Earth, etc.
	Home Economics Teacher	In large schools, invite the Home Ec. teacher to discuss and demonstrate the proper treatment for wool, silk, cotton, etc. and explain about dyes running or wool matting and this forms disintegration. Also demonstrate spot removal or repairs to clothing and proper methods of pressing garments.

CULMINATION

I would suggest a written test based on pictures of distinctive national or occupational clothing and identification of fibres as vegetable, animal or synthetic.

E N T E R P R I S E

GRADE IV A

THE RED RIVER SETTLEMENT

ENTERPRISE

GRADE IV A

THE RED RIVER SETTLEMENT

OBJECTIVES

1. To develop an awareness of the economic and political factors which contributed to the settlement of the prairies.

2. To develop an understanding of the problems which faced the pironeer farmers of the plains.

3. To develop a historical sense in the children relating to the end of the fur trading era and the beginning of settlement on a basis of soil utilization.

UNDERSTANDINGS

1. That the question of "right" and "wrong" is, in some cases, not capable of resolution (in terms of background to the Massacre at Seven Oaks).

2. That a higher economic activity will almost inevitably drive out a lower economic activity (Farming and Fur Trade) in competition for the same resources (land use).

3. That living and working conditions have changed appreciably in the last one hundred and fifty years.

DESIRABLE SKILLS

1. Ability to use an atlas to locate cities and geographic features.

2. Ability to sketch, model and colour.

3. Ability to organize reports, use reference books, etc.

MOTIVATION

The majority of pupils should have an interest in the early days of settlement in the prairies and appropriate photographs, film strips or readings (e.g. of the shooting of Governor Semple) should serve to introduce the unit. See "Red River" - the Departmental Resource Unit.

EVALUATION

Pupil activities will range from individual and group activities to whole class instruction. The first two activities should be assessed informally by teacher and class. Essays written on topics and core instruction given to the whole class may be the subject of formal marking.

TOPIC I

The Physical Setting

Related Questions

1. What are the major physical divisions of Canada?
2. What are the major vegetation zones of Canada and what are the typical growths?
3. What are the major rivers, mountains, lakes, bays of the prairie areas?
4. What animals were found on the prairies one hundred and fifty years ago?
5. What are the climatic conditions of Manitoba as shown by temperature and rainfall figures?
6. What are the qualities of the soils of Manitoba?

TOPIC II

The Highlands

1. What are the origins of the Highland Scots?
2. How did the Scots live in the 18th century refer to "clans"?
3. How did the English try to break up the clans after the "45?
4. Why did the chiefs turn the lands over to sheep?
5. What was the plight of the Crofters?
6. Who was Lord Selkirk and why was he interested in emigration?
7. How did he obtain a grant of land in present Manitoba?
8. How did he obtain settlers - what inducements were offered?
9. Where did the first group of settlers land?
10. Where did the group eventually settle?

TOPIC III

The Fur Trade

1. Between 1780 and 1821 which fur trading companies operated in Canada?
2. What was the sphere of influence of each?
3. How did the operations of each company differ?
4. What territories did the Hudson Bay Co. claim and on what basis?

5. How were the wintering partners of the North West Fur Co. supplied with food?

6. How were the buffalo hunted?

7. How was pemmican made - how long would it keep - how was it prepared for eating?

8. Who engaged in the buffalo hunting - pemmican making trade (Metis and Indians)?

9. Where had the Hudson Bay Co. and North West Fur Co. established posts in the North-West?

10. What form did their rivalry take?

11. How were the Indians affected?

TOPIC IV

The Massacre at Seven Oaks

1. Who led the first settlers to the Red River?

2. Where did the settlers locate?

3. What equipment did the farmers have to plough and clear the land?

4. What crops did they expect to grow?

5. How was land laid out in farms?

6. What was the Pemmican Proclamation? What caused its issue and what was its purpose? Was it legal?

7. What acts led up to the Massacre?

8. What action did Selkirk take?

9. What action did the North West Fur Co. take?

10. What agreement ended the feud between the two fur trading companies?

TOPIC V

The end of the Fur Trade

1. What was the economic purpose served by Winnipeg in 1820 - 60?
   a) Depot for flour and pemmican.
   b) Administrative center
   c) Retirement area for traders.
   d) Farming for wheat, cattle and sheep.

2. How did the colony grow in this period? From whence did settlers come?

3. When were churches and schools established and by whom?

4. When was the monopoly of the Hudson Bay Co. over the Fur Trade broken and in what circumstances?

5. What conditions made farming hazardous in the early period?

6. What is the story behind the Red Fife strain of wheat?

7. Did the Hudson Bay Co. discourage settlement? Why?

8. What expedition investigated the possibility of settlement in the West?

9. What pressures stimulated Confederation in 1860 - 67?

10. What would the rights of the Metis, Indians and Settlers be if Hudson Bay Co. sold out to Canada?

11. What fears did these people have about their future in 1867 - 9?

TOPIC VI

The Red River Rebellion

1. What were the respective viewpoints of the Metis, Indians and Settlers of Red River and those of the Federal government in 1869?

2. What were the major events of this insurrection?

3. Who were the main actors and what parts did they play?

4. What was the result of the rebellion in terms of satisfaction of grievances?

5. What is "land scrip"?

6. When was the province of Manitoba founded - how large was it?

7. When did the railroad reach Red River?

8. What was the life of a settler like in 1860?

TOPIC VII

Winnipeg today

1. What advantages does the city of Winnipeg hold geographically?

2. What is the city's economic function?

3. How large is the city?

4. What are its chief industries?

5. How many of these are related to farming?

6. How many are related to manufacturing?

7. What railroads pass through Winnipeg?

8. What goods travel east through Winnipeg?

9. Which goods travel west through the city?

10. What can you find out about the Red River floods in recent times?

RED RIVER SETTLEMENT

PROBLEM I

The Physical Setting

Subject Area	possible Organization	Possible Activities
Social Studies	Class activity - a large class map also may be drawn	1. On prepared maps of Canada, pupils indicate the major natural regions (vegetation) and the major rivers, bays, lakes, mountains.
Art	Group Activities	2. Each group will sketch and report on: a) Buffalo - appearance, habits, hunting, pemmican. b) Beaver - as above - also use of skins, mode of trapping. c) Antelope - as above d) Elk. And other distinctive prairie fauna as required.
		3. Prepare climatic graphs of temperature and rainfall. Compare Winnipeg with Edmonton, Vancouver, Toronto, Halifax from point of view of: a) Maxima and Minima, temperature, b) Total rainfall and seasonality.
		4. Investigate the soils of Canada - podsols, czernozerms, brown forest, soils, etc. (to establish suitability for cereal growing in prairies)

PROBLEM II

The Highlands of Scotland.

Social Studies	Individual work	On a map of Scotland, colour the Highlands brown, the lowlands green.
	Teacher presentation	Discuss the settlement of Scotland - Picts, Scots from Ireland, Danes, etc. to lowlands of Scotland. Highland organization of clans under chieftains -
	Pupil Groups may research and report on various aspects of these topics.	Discuss Highland raids into England, the tartan plaid, the claymore and targe. Mention the Stuart Kings and the 1688 Revolution - Bonnie Prince Charlie and the '45 Rebellion - Cullodon and the suppression of the clans. Discuss the expansion of the woollen industry in England 1800 and the change over in England and Scotland from arable to sheep farming and the eviction of the crofters from their lands since under the clans system they had no title to individual plots.

PROBLEM III

The Fur Trade

Subject Area	Possible Organization	Possible Activities
History	Map Work	On a map of Canada indicate the area allocated to Hudson Bay Co. by charter - the watersheds of rivers drawing into Hudson Bay and indicate the principal forts at about 1780.
	Teacher presentation	Indicate the role of the French trader, explorers and reasons why they had to continually move west - both because the beaver trapped out in the east, and to cut off trade moving to Hudson Bay Co.
	Map Work	Indicate on the map the routes of the French explorers.
	Teacher presentation	Discuss the defeat of the French (1760) and the rise of English?American traders based on Montreal who supplanted the French and who, deprived of Hudson Bay as a base, were forced to set up posts in the interior, supplied by canoes from Montreal and manned by the wintering partners. Cost of transportation was about 1/3 greater than that of Hudson Bay Co. Wintering partners supplied by Indians and Metis with pemmican from Winnipeg area. As North West Fur Co. moved into interior Hudson Bay Co. forced to conform and trade war developed - fights, use of rum for trade - effects on Indians and on Metis.
	Pupils report on major episodes and important persons	
	Group or individual reports	Investigate and sketch if appropriate:- Birch bark canoes Fire-arms of the 18th century Peter Pond Alexander Henry Alexander Mackenzie Simon Fraser Lord Selkirk

PROBLEM IV

The Massacre at Seven Oaks

Research	Individual or group research with related map and art work	Routes of the Canoe brigades, York boats etc. Find out - a) How Lord Selkirk gained control of the Hudson Bay Co. b) What area of land he was able to acquire for settlement. c) How he persuaded crofters to leave Scotland.

d) The route of the first party of settlers to Red River.

e) The hardships faced during the first two winters.

f) What was the Pemmican Proclamation and why it was issued and by whom.

g) The events leading to the Massacre of Seven Oaks.

h) The consequences to the Northwesters and to Selkirk.

i) The reasons leading to amalgamation of Hudson Bay Co. and North West Fur Co.

h) Some of the reorganization carried out by Simpson after 1821.

PROBLEM V

The end of the fur trade monopoly

	Teacher presentation	Discuss how the Red River settlement grew as farming expanded and suitable varities of wheat (Red Fife) were adapted.
	Appropriate readings from Source Books would lend a degree of realism to this topic. Short paragraphs written by the pupils would test and record major trends	Fort Gary became an administrative centre for Fur Trade, retired Hudson Bay Co. men built houses, churches and schools opened. The Buffalo were driven away and hunters went further afield. The U.S.A. south of the border was rapidly occupied after 1840 and trade to the South expanded in absence of comparably good communications to Eastern Canada. It became impossible for Hudson Bay Co. to enforce its monopoly of the fur trade. After 1860 was difficult for a private corporation to own half a country, and as Canada moved toward Confederation, the Hudson Bay Co. became an obstacle and was eventually bought out.

PROBLEM VI

The Red River Rebellion

English	Individual Essays	Following a discussion of the salient facts - pupils write essays as follows:
	Endeavor to establish that the Rebellion proceeded from excessive anxiety among the Metis	a) The viewpoint of the Metis on Federal actions as affecting their rights and claims in 1869. b) The view point of the Indians as to their rights.

coupled with insensitivity of the Federal Govt. to legitimate aspirations of the Metis - the problem was aggravated by distances and slow communications. Avoid allocating deliberate malice to either party.		c) The view point of the settlers of Red River as to their rights and claims. d) The view of the Federal Government as to its own rights and its views on the aspirations of the occupants of the Red River.
Individual Research		Make a portrait sketch and write a brief biography of:- a) Louis Riel B) William McDougall c) Thomas Scott d) Donald Smith e) Sir Garnet Wolseley f) Sir John McDonald
Teacher Presentation		Sum up the results of the Rebellion in terms of satisfaction of the Metis and settlers claims to land and self-government (refer to land-scrip, which becomes important with reference to later troubles with Metis) Discuss the building of the C.P.R. - the terms on which it was built (land grants, etc) the effect on settlement of the prairies, and the effect on farming stemming from a cheap and assured marketing route via the Great Lakes to Europe.
Art	Read suitable descriptions or show films illustrations to stimulate interest	a) Draw an early steam-train or b) A pioneer sod hut. or c) A farming scene about 1860 in Manitoba.
PROBLEM VII		
Winnipeg Today		
Research	Use Canada Year Book as reference	1. Locate Winnipeg on a map of Canada noting: a) Its central position between the prairies and Great Lakes.

b) Location at a bottleneck of communications between the Lakes Winnipeg and U.S. Border.

c) Easy transportation to the South.

d) Good supplies of water (Hydro-electric).

e) Manufactured goods move west, raw materials move east.

2. What are the city's functions? -

a) What are the industries of Winnipeg? -
flour, milling, brewing, slaughtering, meat packing, clothing, printing, food processing, fur processing.

3. Graph population growth (city)

population	1874	1901	1931	1961
	1969	42,400	222,000	265,000

Map Work

4. Locate on a map the sources of the raw materials processed in Winnipeg or passing through it - wheat, cattle, lumber, fish, etc.

5. Discuss the Red River floods of 1966 or other periods.

Art — Group Report

Make a long mural showing the development of Winnipeg from early times.

Illustrate:-

Fur Trading Post (Fort Rouge, 1738)

Red River Settlers (1812)

Hudson Bay Company (Fort Garry 1840)

Wolseley's march on Red River (1869)

A. C.P.R. train (c.1880)

A farming scene with combine 1950

Modern Winnipeg (High Rise Buildings)

&

(Red River floods 1966)

ENTERPRISE OUTLINE

GRADE IV (B)

THE METIS COLONY

IN RELATION TO

A CHANGING WORLD

ENTERPRISE

GRADE IV (B)

THE METIS COLONY IN RELATIONS TO A CHANGING WORLD

OBJECTIVES:

1. To acquaint the pupils with the ethnic and historical background of the Metis people.

2. To foster a sense of pride in the Indian heritage and to ensure that as the Metis integrate with the whites, they are encouraged to preserve worthy elements in their cultural background.

3. To establish the concept of the equality of rights.

4. To examine various misunderstandings that whites and Metis people have about each other, and to promote an understanding of the causes thereof and to break these prejudices down in the classroom.

5. To suggest ways in which the Metis can adjust themselves to life in modern Canada and ways in which other Canadians can help them to achieve this.

6. To help the pupils realize that there are both responsibilities to be accepted and privileges to be enjoyed by both white and Metis while integrating in our changing society.

UNDERSTANDINGS:

1. That the Metis recognize their own unpreparedness to complete successfully in the changing world and desired a reserved community in which to rehabilitate.

2. That the Metis having withdrawn from the fringes and slum conditions of the outskirts of white communities have attained ownership and a feeling of security on the colonies.

3. That in the present changing world economic independence is normally a prerequisite of social acceptance.

4. That the prejudices and misunderstandings between Metis and White are chiefly resultant from poor communication between the two races.

5. That the lack of some services in communities as small as colonies is economically inevitable.

DESIRABLE SKILLS:

Ability to:

1. Prepare written and oral reports in acceptable English,

2. Use an index in locating reference material.

3. Make accurate drawings or models.

4. Make pictorial charts to represent facts.

5. Draw maps to scale, with directions, latitude and longitude, keys and legends.

OVERVIEW

This enterprise should trace the history of the Albertan Metis, familiarize students with the origin and political organization of the present day colonies, study the economics of the areas, examine the cultural aspects of the Metis society and attempt to promote better understanding of the causes of the present depressed state of many Albertan Metis in present society.

MOTIVATION:

A pre-quiz could be planned for the class with possible expansion of use to students interviewing White neighbors to determine existing knowledge of the attitudes toward their Metis neighbors.

Have Metis children report on their "family trees" to stimulate research into the origin of the Metis.

Presenting stories, poems or films about Metis people should arouse interest.

EVALUATION:

Objective tests should be limited to geographic skills, political and administrative facts and statistics which would enable the pupil to speak as an informed individual about his own people.

This enterprise gives ample opportunity for participation in group work and community research projects. Evaluation should be concentrated on aspect of the activities.

The following list of topics and related questions may offer a possible avenue of investigation:

TOPIC I

History

European Exploitation and settlement

Related Questions

1. What brought Europeans to settle in Canada? fish, fur, colonies, etc.
2. Which furs were of most value to the Europeans and why?
3. Which company controlled the fur trade in the Hudson Bay area - what was the company's claim to the area based on?
4. Why were the Canadian river systems also the main trade routes?
5. When was the North-West Co. formed? From what area did it draw its furs?
6. Where did the Hudson Bay Co., and the N.W. Co. recruit their employees?
   H.B. Co. - Scotland, Hebrides, England.
   N.W. Co. - Ditto (for senior employees)
   Recruited French Canadians and Indians as paddlers for canoes.
7. What was marriage "en facon du nord"? (a temporary marriage during trader's station in one locality)
8. What were the staple foods of the canoe brigades - flour, pemmican.
9. Where was the buffalo hunted and pemmican manufactured and by whom (Metis and Indians west of present Winnipeg)
10. What was the main supply route of the North West Co. - Montreal via French River to Georgian Bay, thence to Fort William, thence by Lake Winnipeg to the Saskatchewan River system and to the Athabasca - Mackenzie system.

TOPIC II

The Metis and European Settlers.

1. What was the racial ancestry of the Metis?
2. Where did they tend to live and what occupation did they follow?
3. Why were the Metis attached to the N.W. Co. rather than the H.B. Co.?
4. Who was Lord Selkirk and why was he interested in the Scottish crofters?

5. How did he obtain the right to the Red River area settlement (He bought controlling interest in H.B. Co.).

6. Why was the Red River area selected for settlement?

7. How did this project threaten the N.W. Co. traders?

8. What orders did the Governor of the Red River colony in January 1814 about removal of provisions from the area and why?

9. What action did Duncan Cameron take against Macdonell?

10. What were the circumstances of the Massacre at Seven Oaks?

11. What legal redress was sought after the massacre and how did the suits end?

12. What caused the amalgamation of the two fur trading companies in 1821?

TOPIC III

The Metis and Louis Riel in Red River

1. What factors led to the H.B. Co. losing its claim to all land draining into Hudson Bay?
   - inability to enforce monopoly in trade
   - increasing farm settlement
   - expansion of U.S.A. westward and danger of annexation.

2. On what terms did the H.B. Co. sell out to Canada?

3. Why were the Red River Metis concerned about the activities of surveyors in 1869?

4. What steps did the Metis and Riel take to enforce recognition of their rights - what rights did they claim?

5. What parts in the Rebellion were played by
   a) Riel
   b) Thomas Scott
   c) Bishop Tache
   d) Governor McDougall
   e) Donald Smith
   f) Sir Garnet Wolseley

6. How did the Canadian government placate the Metis?

7. Why would it have been politically difficult if Riel had been captured and tried?

1. What had happened to the buffalo herds by 1885?

2. What resources were left to the Metis and Indians then?

3. What complaints did they have against the Federal government?

4. What were the major incidents of this rebellion?

5. How were troops moved against the Indians and Metis?

6. What was the fate of Riel?

7. What were the practical results of the 1885 Rebellion as concerns the Metis and Indians?

8. What factors influenced the settlement of Alberta after 1886?

9. What can be found out about the Metis between 1880 and 1930?

10. What conditions caused the passage of the "Metis Betterment Act" - what were the provisions of this Act?

TOPIC IV

The Geographical Conditions

1. What are the natural climatic and vegetation areas of Alberta?

2. What are the major physical features - Rockies, Pre Cambrian Shield, Plain area - major rivers and lakes, muskeg.

3. What are the temperature and rainfall figures for various areas - how do these affect vegetation growth, travel, housing?

4. In what areas of Alberta is mining, ranching, farming, logging, fishing, hunting a major economic resource?

TOPIC V

Administration (Provincial)

1. Which department of the provincial government administers colony affairs?

2. Who is the Minister. Deputy Minister?

3. Who is the Supervisor of Metis Rehabilitation Branch of the Department of Public Welfare? Where does he reside?

4. Who is co-ordinator of Metis Area activities? Where does he reside?

5. When did the Metis Betterment Act establish Metis colonies? Why? What percentage of Metis are residents of colonies?

6. How was the land for the colonies chosen? On whose recommendation?

7. What areas are presently operated as colonies? Where are they located?

8. How is the cost of operating colonies financed? What monies build the Metis Trust Fund? How is the money used? What percentage of colony operating costs does this money supply?

9. What is the Metis Association of Alberta? Who is the present executive? How effective are its operation? What is its membership?

10. How are Metis colonies distinct from Indian reserves?

TOPIC V

Local

1. What is a settlement Association? How is membership obtained? Maintained?

2. How many areas still have a resident supervisor? How is he chosen? What are his responsibilities in supervision and administration? How many Metis have served in this capacity in the history of the cononies?

3. How often are settlers business meetings held? Who is eligible to vote at these meetings? Are democratic parliamentary procedures followed at these meetings?

4. How may a settler procure land for agricultural purposes? A village lot?

5. Who comprises the local governing board? What is their term of office? How are they elected? What are their duties? What must their qualifications be?

6. What is a "Certificate of Occupancy? How may it be obtained?

7. What regulations govern the seizure, transfer and cancellation of a settler"s holdings?

8. What regulations prevent the exploiting of settlers by entrance of outside business operators?

9. How does local government on a colony compare with local government on a reserve? In a municipal district or county?

10. Are Metis living on colonies subject to all dominion and provincial laws? Game Laws, traffic laws, laws protecting freedom of religion?

11. Are the Metis residents of the colonies prepared to assume self-government? What steps have already been taken toward this goal?

TOPIC VI

Economics - Housing

1. What was the original type of house built on the colony?

2. How many new homes have been built in recent years? What are the benefits of these frame houses?

3. What must a settler do to qualify for government assistance in building a new home?

4. What assistance does the government offer?

5. With what building standards must the applicant for assistance comply.

6. What home beautification projects would be practical on the colonies? Does remoteness of settlements act as a deterrent to beautification?

7. Could electricity be made available to settlers' homes at economical rates?

8. What does the Metis home of today have that it did not have a quarter of a century ago?

9. How does the standard of living seen in an average colony home compare with the average Canadian home today?

Colony Industries and Occupations

A. Trapping

1. What percentage of settlers originally made their living by fur-trapping? What percentage now? Has compulsory education affected this industry?

2. Which fur-bearing animals are found in quantity on the colonies? How many thousands of dollars annually are realized by settlers of all areas from sale of furs?

3. Why are regulations necessary to limit the take of game?

4. How many settlers have registered trap lines off the colony?

B. Hunting and Fishing

1. To what extent is hunting still practised for family meat supply?
What game birds and big game animals are available on the colonies? Is there any off - area hunting? Is meat still shared as in past years? How is it preserved? What special aptitudes do the Metis have for hunting?

C. Farming

1. What is the cultivated acreage on all areas?

2. Which colonies have good farming land?

3. What percentage of farms on the colonies are self-sustaining? Of those which are not, how many could be made more profitable through correct farming practices?

4. What are some of the hindrances to successful farming on the areas? Does the Metis readily adapt to this industry?

5. Are most farms grain farms or mixed? To what extent are swine and sheep raised? Are goats practical for family milk supply?

6. What is the purpose of the government farm demonstrations in each area?

7. Are farm dug-outs required extensively for farm water supplies?

8. Who is responsible for weed and pest control on the colony?

9. What problems arise out of the use of government-owned farm machinery?

10. What assistance is given in purchase of seed grain?

11. How can a farmer get new acreages for use without a large outlay of money for initial breaking?

12. On which areas could poultry raising for egg marketing be practical? What percentage of farmers keep poultry for their own use? What are the hindrances to this practice?

13. On which areas can market potatoes be grown profitably? Are vegetable gardens developed sufficiently on all areas? What are local hindrances to productive gardens?

14. Is horse-farming still economical on the colonies? Will the Metis have to learn to use modern time and labor saving machines for competitive farming in this present changing world?

D. Ranching

1. What areas provide lands suitable for grazing? How many settlers are engaged chiefly in ranching on the colonies? What is the size of the average herd?

2. What market is there for horses? Sheep?

3. How many thousands of dollars of cattle are marketed from the areas annually?

4. Why does the government supply a pure-bred sire?

5. What herd laws are in effect on the colonies?

6. Are cheap pickets available for fencing?

7. How is hay-making managed?

8. How many government cattle projects are in operation on the areas? What is their purpose?

9. Does the Metis make a good stockman or ranch hand?

10. What practices for preservation of grazing lands will ensure grasslands for future herds?

E. Lumbering

1. Which areas produce timber suitable for producing marketable lumber?

2. What is the annual output of lumber from these areas?

3. How many settler-owned mills operated in the areas? How many settlers find part time employment in this industry?

4. What safeguards are employed to preserve this industry for the future generations?

5. Does the Metis adapt readily to logging? Sawing? Mill-operating? Why have out= siders been employed by settlers to fill job positions in this industry?

6. What labor problems persist in this industry on the colonies?

7. What technical know how is necessary to operate a mill profitably and to produce lumber of a marketable quality?

F. Incidental Employment

1. On what areas is there employment rising out of the oil industry? To what extent? Of what nature is this employment?

2. How many settlers are employed on the areas as truckers for hauling lumber, freight, livestock, etc? As cat-skinners?

3. How many settlers have taken specialized fire-fighting training? To what extent is fire fighting a seasonal job?

4. What use is made of local markets for sale of fence pickets, etc?

5. How many settlers are regularly employed in maintenance jobs at colony headquarters? In Schools? In government stores? In post offices?

6. Do any settlers supplement their income by sale of handicrafts?

7. To what extent do settlers find employment off the area as farm laborers, road construction workers, sugarbeet pickers, etc.?

8. Which areas are close enough to centers where settlers can commute by motor vehicle to work? How many avail themselves of these opportunities? Do the Metis have a fair chance at employment for which they qualify?

TOPIC VII

Financing

1. How has the Metis had his desire for modern conveniences and appliances stimulated? How has the ability to purchase these lagged behind the stimulus?

2. What particular problems do the Metis have in procuring credit?

3. Are there other factors besides the protection of their holdings by low (see Political, Topic II, No.7) that act as deterrents to procuring credit? Are there unfounded prejudices?

4. What would be a sound reason for seeking credit?

5. Do settlers qualify for assistance to under-developed areas? How can this assistance be applied?

6. Is it a sound financial practice to spend monthly cheques before they are received?

7. How does the trader or merchant benefit by permitting this? How does he cover "bad debts"?

8. Why are government stores in colonies operated on a "strictly cash" basis?

9. What are the advantages of each; cash and credit purchasing?

10. What is a reasonably percentage of the total income to be spent on each: food, clothing, transportation, entertainment, etc?

PROBLEM V - Education

TOPIC I

Education in the Past

1. What knowledge or education did the Indian and Metis feel was necessary for their children 50 - 100 years ago?

2. Why isn't this kind of knowledge sufficient for Indians and Metis today?

3. What was the standard of education among the Metis on the colonies 25 years ago? (Illiterate - grade 5)

4. How many of the older generation of Metis read or write in English? French? Syllabics?

5. What are some reasons why Metis have not received an adequate education in the past? (lived in isolated and unorganized school districts, moved about in search of work, game, etc.)

6. What factors have retarded the progress of Metis in schools? (language and cultural barriers, poor attendance, attitudes of parents, cost, etc).

7. Where did Metis children attend school before colony schools were built?

8. What government department was responsible for establishing Metis colony schools?

9. When were the first colony schools built? By whom? What subjects were taught?

10. What were the first colony schools like? (as regards to heating, light, construction, equipment, etc.)

11. How did these compare with White schools in cities and rural areas?

12. Why were these not church schools as on Indian reservations?

TOPIC II

Education today

1. How many colony schools are under the jurisdiction of the Northland School Division?

2. For what specific purpose was the Northland School Division formed? How is this school division different from other divisions in the province?

3. Which colony schools are under the jurisdiction of the other school divisions?

4. What are colony schools like today? How do they compare with White schools in cities and rural areas?

5. How many children are attending schools on the colonies? (500)

6. What factors have made attendance at school easier and more regular?

7. What is the average percentage of attendance in colony schools? How does this compare with city and rural white schools? How does this compare with the average 25 years ago?

8. Have the attitudes of Metis parents changed regarding education? In what way?

9. What is the cost of education on the colonies (e.g. it has been estimated that the cost on a particular colony is $3. per pupil per day).

10. What opportunities and advantages do Metis children living on colonies have that few other children in the province have? (free education)

11. How many children have completed grade 8 or 9 in colony schools and have left the colony to further their education in high school? Vocational or trade school? University? (55 students are taking further vocational or academic training)

12. What trade, occupation or profession have these Metis school graduates chosen?

13. Have any completed their training and are now employed? How successful are they?

14. Have any foresaken their jobs and training and returned to the colony? Why?

15. Have any completed their training and found employment suited to their training on or near the colonies? Does this inspire children in school?

16. How many school drop-outs have there been below grade 9 in colony schools in the past 5 - 10 years? What were their reasons for quitting? What are these people doing today? How many of these are still on the colony? How many have found jobs off the colony? In what type of work? How will they be suited for this work 20 years hence?

17. How can education help the Metis to become better farmers? (Knowledge of crop rotation, seed varieties, balanced rations, market trends, farm records, simple mechanics).

18. What can the Metis learn in school that will make his lumbering operation more profitable? (Scaling, timber evaluation power saw maintenance, bookkeeping).

19. How can an education help to make a better metis housewife and mother? (sanitation, nutrition, budgeting)

20. How can a higher standard of education on the colonies widen the scope of social activities and family life?

PROBLEM VI

Transportation and Communication

TOPIC I

How the Settlers came to the Colonies

1. How did the Metis travel 150 years ago?
2. How did they travel 50 years ago?
3. What methods did the first Metis use to move to the colonies?
4. What were the first trails on the colonies like?
5. What were the best methods of travelling on them at various seasons?
6. Why do roads on the colonies often take a different route than the old trails? (muskeg, etc.)
7. What is a "muskeg"? How does it hamper travel?
8. How many people on the colonies had care at the time the colonies were first formed?

TOPIC II

Respective Advantages of Horse-drawn vehicle and Motorized transportation

1. What advantages has a car over a horse or a team of horses?
2. What can you do with a tractor that you cannot do with a team of horses? and vice versa?
3. Why would a colony settler often prefer to keep a team of horses rather than a tractor?
4. How useful do you think a truck would be to a settler?
5. What motor vehicle would prove as useful as a team on the colonies in winter?
6. How can a team be used in deep snow? Why can't a car be used in deep snow?
7. What are the expenses involved in the running of a car?
8. What advantages has a truck over a team for transporting farm goods?
9. What is a 4-wheel drive vehicle?
10. Why is a horse travel impracticable on modern highways?
11. How many cars, tractors, and trucks are there on the colonies?
12. How many people on the colony own a team? How many saddle horses are there? Of what use is a horse to a herdsman?

13. Are boats used on any of the colonies? What kind?

TOPIC III

Economic Aspects of Owning and Operating a Vehicle

1. Why do you think there are not very many cars on the colonies?
2. What does a new car, truck and tractor cost?
3. What does "financing" mean?
4. What is vehicle registration? What is a driving license for?
5. Where does the money come from to build and maintain highways?
6. Why do you think there are so many derelict vehicles on the colonies? Why should a vehicle be kept in good repair?
7. What happens if you do not look after a team of horses?
8. How can a truck or a tractor be used on a colony to earn its keep?
9. Why is gas for a farm vehicle cheaper than for cars?
10. What other vehicles are there on the colonies besides the ones mentioned above?

TOPIC IV

Methods of transport to cities and between countries

1. To what extent do Metis on colonies use trains? Aircraft? Buses?
2. Where is the nearest railway? What kind of power is used on the railways? What are railways used for?
3. Where is the nearest airport?
4. How many colony Metis have been overseas? How did they travel?
5. How many colony Metis have been to the United States? How did they travel?

TOPIC V

Methods of Communication

1. Why was the trading post a center of communication?
2. What part did the voyageurs play in early communication?
3. What signs did the trappersuse in the bush to convey messages?
4. How did the Metis find out what was going on in nearby towns? On other colonies?

5. What was the ?Moccasin Telegraph"?

6. To what extent was syllabic writing used? (letters, Scriptures)

7. When were two-way radios introduced to the colonies? What interest had the Forestry Department in these?

TOPIC VI

Use of mass media for news and entertainment

1. What television programs have you seen?

2. What radio station do you listen to?

3. What is a news program?

4. What is a two-way radio? Why do isolated areas often have a two-way radio?

5. How do the radio and television stations find out things that are happening?

6. What is a telephone? Can you use one?

7. What kinds of films do you like?

8. Do any of the colonies have a post office?

9. Do you often see a newspaper? Where is it from? Has your community a newspaper?

PROBLEM VII

Social

TOPIC I

The Family

1. Is the family the central unit of Metis Society?

2. How does parental authority today compare with that in the Canadian Indian Tribes in years past?

3. How much influence does parental authority and counsel have in the life of the young adult? Is this stronger or weaker than in former years?

4. How far does parental authority extend into the families of married children?

5. Are wedding ceremonies adapted from Indian or white culture? What type of celebration is carried on? What food is served?

6. What activities does the family still enjoy together?

7. How is work in the home shared? Does each individual have particular responsibilities?

8. Is any work in the community shared in the form of work bees?

TOPIC II

Sports

1. What games do Metis generally play?
2. Which of these are of Indian origin?
3. Do the Metis on the colonies play hockey, ball or other team sports? Do they compete with other colonies? White settlements?
4. How many of the colonies have skating or curling rinks?
5. Do the Metis from the colonies participate in rodeos or stampedes? How successful are they?
6. Are there any outstanding local athletes on the colonies?

TOPIC III

Other Entertainment

1. What forms of entertainment do the Metis particularly enjoy? Which of these are of the white culture and which have originated with the Indians?
2. Do the colonies have community picnics? What activities are carried on at these gatherings? What other events or activities do the colonies sponsor?
3. Do the Metis enjoy the fellowship of Indian or white more? Does this vary with the individual and the locality?

PROBLEM VIII Arts and Crafts

TOPIC I

Painting and Sketching

1. Are the Metis interested in painting, sketching, etc.?
2. Have any won acclaim in this field?
3. Does the art generally relate to Indian or white culture?
4. How do materials and methods compare with those of past Indian cultures?
5. Are designs and colors significant?
6. Is this art related in some cases to the native Indian religion?

TOPIC II

Music

1. Are the Metis people interested in music?
2. What instruments do they usually enjoy and play?

3. Have any Metis been professionally trained in this field?

4. Is music related to Metis religion - past and present? Are certain instruments of special significance?

5. In what forms of entertainment is music used?

TOPIC III

Literature

1. Are any Metis people prominent in this field?

2. Who was Pauline Johnson and of what racial background was she?

3. For what is she most famous?

4. With how many of her poems are you familiar? How many have you memorized?

5. In what Canadian park is there a monument erected to Pauline Johnson's memory? How was she remembered by the Canadian government on her centennial?

6. What other poems or literature deals with the Metis way of life?

TOPIC IV

Crafts

1. What crafts of the Indian does the Metis retain?

2. To what extent are these crafts being taught to the younger generation?

3. What crafts of the white culture do the Metis enjoy?

4. Are some Metis people particularly successful at a specific craft?

5. In what crafts are wood, plant fibres, skin, hair, bone, horns, bark and beads used?

6. What designs and colors are especially significant? What do they stand for?

7. Which crafts are associated with recreation, religious or ceremonial rites?

8 What tools, furniture and domestic articles are hand-made?

TOPIC V

Costumes

1. How do costumes of the past compare with those of today? What percentage of the present costumes are hand-made?

2. From where did the Metis obtain thread? beads, dye and similar materials? How do these materials differ from those used now?

3. Do many Metis people make traditional Indian costumes for sale?

TOPIC VI

Tentmaking

1. What materials were used in the past and how were they prepared for use?

2. How do materials and procedures differ today?

3. To what extent is this craft carried on today and how is it valuable?

TOPIC VII

Carving

1. Are many Metis interested in carving? Have any won acclaim?

2. Does this carving relate to the Indian way of life?

3. How much of this craft is related to recreation or religion?

4. Are designs and colors of special significance?

PROBLEM IX HEALTH AND WELFARE

TOPIC I

Health

1. What are the responsibilities and duties of the public health nurse? What special services are available on request through the Department of Public Health?

2. What assistance for medical insurance plans is available to Metis living on the colonies? How many settlers take advantage of this insurance? What are the advantages?

3. How can inadequate housing affect the health of the Metis?

4. What is the cause of tuberculosis? Why are Metis especially susceptible to T.B.? What is the nature of treatment in a T.B. sanatorium? Why types of occupational therapy are carried on? Why is it important to attend post-sanatorium check-ups? What responsibility has a citizen in reporting suspected cases?

5. What steps would be necessary to improve the general dental health of colony residents?

6. What is the mortality rate on the colonies?

7. How has the change of diet to the present canned and soft foods affected the general health of the Metis (teeth, lowered resistance, etc.)
8. What diseases can be contacted by drinking impure water? What steps can be taken to ensure a safe water supply? (treating of well water, boiling water taken from lakes and rivers, adding purifier)
9. What health problems arise out of the lack of sanitation?
10. What are the social implications of personal cleanliness?
11. How does the use of alchohol lower resistance to disease? What are the effects of alcohol on the body? What effect does the regular use of alcohol have upon the family?

TOPIC II

Welfare

1. Is Metis indigence increasing? How do the recipients feel about receiving welfare assistance? How does the community feel toward recipients of welfare assistance?
2. What is the purpose of family allowance? Welfare assistance? What regulations govern its use?
3. How much is spent annually on welfare on the colonies?
4. What are some of the problems of administering welfare assistance? Does it discourage return to work?
5. To what extent has welfare assistance increased over the past 25 years?
6. What are the beneficial and detrimental effects of receiving welfare assistance?
7. Why has the Department of Public Welfare recently sought the help of colony families in caring the Metis government wards?

EUROPEAN SETTLEMENT

PROBLEM I

Subject Area	Possible Organization	Possible Activities
Social Studies	Individual and Groups work	Prepare a large relief map of Canada, of paper mache or asbestos clay, in size about 3' x 3'. Indicate by suitable coloration, the chief physical features. Individual duplicate similar maps of Canada - insert details as above.
	Group Reports	Report on:- Cartier, Champlain, Radisson, Hurons, Crees, Iroquois.
	Teacher Presentation	Discuss the formation of the Hudson Bay Co. the terms of its charter, the location of its forts and factories with appropriate vocabulary: voyageur, clerk, factor, "made beaver", "debt", canoe du maitre, portage. Pupils make individual notes and maps.
	Teacher Presentation	Discuss the formation of the N.W. Fur Trading Co., its policy of taking trade to the Indians as opposed to the H.B. Co. Policy of making Indians come to the forts - the explorers, Pond, Mackenzie, Thompson, etc.; the main supply route from Montreal to Ft. William, to Red River and up the Saskatchewan - the need for nutritious preserved food - corn and pemmican to supply the working partners.
	Pupil Reports and sketches	Report on trapping beaver, hunting buffalo, making pemmican, making and repairing a canoe, building a trading post, etc.

PROBLEM II

THE METIS AND EUROPEAN SETTLEMENT

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher Presentation	Point out that the employees of the Hudson Bay Co. came out from Canada, England and Scotland without wives, and hence married "en facon du nord" Indian women. The children were in general provided for.
	Pupil notes and sketches and maps	When the term of the employee expired Metis of British and French Indians ancestry were employed as hunters, voyagers, etc. Many gravitated to the Manitoba area and hunted buffalo to supply N.W. Co. canoe brigades with pemmican. They took up land on the French system,

Subject Area	Possible Organization	Possible Activities
		with narrow frontage on the river, (10 or 20 chains wide) and up to 2 miles deep.
	Group Research	Report on:- Lord Selkirk, The Red River Settlement, The Massacre at Seven Oaks, The Amalgamation of H.B. Co. and N.W. Co. Early days in Red River.

PROBLEM III

THE METIS AND LOUIS RIEL

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher Presentation	Discuss the circumstances that led to H.B. Co. selling out its rights and Ruperts land to Canada; the fear of the Metis over land titles, the activities of surveyors who prepared to lay out lands in block schemes. The Rebellion and the results of the commission who investigated.
	Pupils write up notes and sketches of French and English land survey systems, Red River Carts, etc.	Report on chief actors in the Red River Rebellion, Riel, Donald Smith, Bishop Tache, Governor McDougall, General Wolsely, Thomas Scott.

The 1885 Rebellion

History	Teacher led discussion and presentation Note - Such terms as "The Metis fight for their land" should not be used - many Metis knowingly settled on forbidden land or land that belonged to Indians. Discuss in terms of misunderstanding and poor communication. Note - The Metis could have obtained patent to land readily by following established procedure - Gabriel Dumont had title to his land for example.	After the Red River Rebellion many Metis moved west to the present Saskatchewan and Alberta after the buffalo. Many had received "hand scrip" giving title to lands in Manitoba, but had sold this scrip to speculators. Some settled in the new areas, but by 1880 most of the buffalo had gone. Others lived a nomadic life hunting and fishing. Report on:- a) The Metis Grievances b) The case for the government c) The major incidents of the rebellion d) The trial of Riel
	Discussion with older Metis in classroom	What was the condition of the Metis prior to the Metis Betterment Act.

PROBLEM VI

GEOGRAPHICAL CONDITIONS IN ALBERTA

Subject Area	Possible Organization	Possible Activities
Social Studies	Individual Map work	Prepare map of the geographical (physical) features of Alberta - Rockies, Pre-Cambrian Shield, prairie, parkland, etc. Major rivers and discuss economic conditions. Keep a record of temperature, rainfall and snowfall if such material not published.

TOPICS V to XI

The questions posed here are so numerous that it is not possible to give detailed suggestions as to how inquiry should proceed.

I suggest that the following modes of investigation be explored as appropriate.

a) Arm groups or single children with lists of questions on their own colony to be investigated by asking local inhabitants, parents, etc.

b) Invite appropriate adults, Metis or officials, to explain, discuss and argue about current conditions (e.g. R.C.M.P., game wardens, Forestry personnel).

c) Write to various government bodies for information.

d) Make collection of tools, implements, skins, seeds etc. as required.

e) Invite experts on farming, stock breeding, finance, etc. to come to school in their turn and answer questions posed by pupils and parents. If not possible, lists of questions could be sent to such persons.

f) Essays, reports, maps, models of local problems and features should be made.

The adult resources of the community should be deeply involved in this enterprise. It should not be treated as an academic exercise.

This office has much material available on the Rebellions of 1869, 1885, the trial of Riel and Metis problems after 1885 which can be duplicated on request.

INFORMATION SUPPLEMENT

Origin and Progress

Royal Commission (1933) - Metis people requested colonies from public lands and planned administrative set-up.
Established by Metis Betterment Act (1940).
25 years later - approximately 15% of Metis in Alberta living on colonies
- 500 families including 50 old age pension families
- 2,500 colony residents
- 700 school children (50 in High or Vocational Schools and University)
- 200 new homes built recently
- 6000 acres broken, 3500 cropped
- 1300 cattle, 800 horses, 350 swine, 1500 fowl and 40 sheep
- 6 million feet of lumber cut annually
- timber industry earnings $120,000
- cattle sales $20,000, grain $45,000, trapping $10,000
- area improvement projects $90,000

Areas

#1 Keg River (Paddle Prairie) T102 - R21 - W5 - 18 townships - 140 miles north of Grimshaw - timber, agricultural land.

#3 Utikuma (Big Prairie, Gift Lake) - 18 townships - 30 & 50 miles north respectively of High Prairie - both have timber and cattle, Big Prairie has agricultural land.

#4 East Prairie - 25 miles south of High Prairie - T71 - R15 - W5 agricultural lands and timber.

#7 Beaver River (Caslan, Kikino) - 30 miles south of Lac La Biche - grazing lands, fishing.

#10 Fishing Lake (Fishing Lake, Elizabeth) - six townships - grazing lands, fishing.

#8 Wolf Lake - colony has been dissolved.

Alberta Metis Association

The Metis Association of Alberta received its charter in 1961. It is presently comprised of approximately two hundred members. Annual fee of $1.00 is charged for membership. Conventions are held annually on a colony. The executive meets twice a year. The executive is comprised of a president (Adrian Hope), a secretary-treasurer (Mrs. Annie Collins), and three vice-presidents. Local chapters are organized on each colony and at such Metis centers as Faust, Ponoka, Turner Valley and Grande Cache.

Administration

Minister of Public Welfare (Mr. A.J. Hooke) administers Metis Betterment Act - program supervised from Edmonton by Supervisor of Metis Rehabilitation (T. M. Johnson) and Co-ordinator of Area Activities (Z. Dedeluk). Local Supervisors are still resident on some areas to advise in gainful activity, check living conditions and

establish program of reserve labour. Each area is organized in a settlement association - Metis who voluntarily live on the Area and have approved membership - (full 17 years of age and resident of Alberta for 5 years).

Under the Metis Betterment Act a Metis is a person of White and Indian ancestry, having not less than one quarter Indian Blood, not considered Indian under the Indian Act.

Payment of annual tax of $10.00 per land allotment qualifies settler for logging, fishing and trapping permits.

A local board of 3 members (qualifications - bona fide, settler, literate, limited criminal record) elected for three years approves and rejects applications for membership, proposes local projects, assists Area Supervisor to look after needs of community. At a monthly meeting colony affairs are discussed and programs planned. If suggestions are considered practical programs are approved by Central Office and promoted by local authorities.

Local Supervisors are now hired as civil servants by the Personnel Officer of the Department of Public Welfare. Most of the colonies have had one or more Metis Local Supervisors in the past. Only three of the eight Area settlements had retained resident supervisors by 1966. Others are served by periodic visits. During 1966 all government-appointed members were deleted from the Board in a move toward increased self-government.

Progressively throughout the history of the colonies the responsibility for each, health, education and social assistance services, has been assumed by other government branches, leaving the Rehabilitation Branch free to concentrate upon industry. As a result, the multiple responsibilities of the Local Supervisor have been reduced to the following majors -

(a) Issue hunting, trapping, fishing and timber permits and travel warrants; prepare pay lists; compile records for Branch office.
(b) Plan and supervise Area Development projects to replace public assistance.
(c) Develop an Area demonstration form for guidance in farming practices and a government herd to supply breeding stock to interested settlers.
(d) Plan and oversee timber operations and sales.
(e) Direct a housing programme.
(f) Advise, encourage and assist individual settlers in all rehabilitation efforts.
(g) Assist other government employees (nurses, teachers, social workers) to carry out their duties on the colony.

Benefits and Privileges

A "Certificate of Occupancy" comparable to a land title may be obtained by a settler when he has (1) erected a house according to specifications, (2) cultivated a garden, (3) cleared and broken a specified acreage, (4) provided for livestock.

This certificate (1) is not liable to seizure, (2) is transferrable to another Settler Association member, (3) upon death of holder, passes to immediate family, (4) is subject to cancellation upon absence of one year or if presence of holder in area is considered by Board to be detrimental to the working of the Association.

Monies collected from taxation, timber permits, hay leases, store profits, etc. build a Metis Trust Fund which is expended for work projects, high education promotion and other colony benefits.

INFORMATION SUPPLEMENT

No person other than a member of the Settlement Association may enter an Area to do business unless authorized by the Board with approval of the Minister. Government Stores have been established on four areas (gross sales $150,000 per annum) offering fair prices, eliminating profiteering and incurring of heavy debt. (Three out of four storekeepers are Metis.)

Three settlements - Paddle Prairie, Kikino, Fishing Lake have local Post Offices.

One Area has a Forestry Tower manned by a local Metis.

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ENTERPRISE OUTLINE

GRADE IV (C)

LIFE IN A MOUNTAIN REGION

THE ANDEAN CIVILIZATION

THE INCAS OF PERU

ENTERPRISE

GRADE IV (C)

THE ANDEAN CIVILIZATION - THE INCAS OF PERU

OBJECTIVES:

1. To emphasize the diversity of accomplishments of the Amerindians in different parts of the continent.

2. To help the pupils realize the effect of altitude on climate, vegetation, agriculture and human physiology.

3. To master the basic political, industrial and social history of Peru.

UNDERSTANDINGS:

1. That the present status of the Peruvian Indian stems from the geography of the country.

2. That economic well-being of a people depends on resources, communications and education.

3. That the problems of Peru - social, economic and political are not susceptible of an easy solution.

DESIRABLE SKILLS:

Ability to understand:

a) scale on a map
b) that temperature is affected by altitude and that this in turn affects vegetation.
c) that agriculture is dependent on suitable topography, soils, temperatures and rainfall.
d) that different plants are suited to specific conditions.
e) that economic self-sufficiency is rarely possible except on a low level of prosperity.

SPECIFIC SKILLS:

a) Ability to make cross-sectional drawings from contour lines.
b) Ability to draw and colour maps, and to read conventional symbols.
c) Ability to write and read short reports.
d) Ability to locate information from reference texts.
e) Ability to deduce facts or conditions from illustrations.
f) Ability to make line or bar-graphs of climatic data.
g) Ability to define types of vegetational zones - e.g. tropical rain forest, coniferous forest, etc.

OVERVIEW:

This enterprise is concerned with the physical conditions of the land of Peru; with the rise of the Incas civilization and its mode of political organization; with the conquest by Pizarro, and the subsequent colonial regime; with the revolt of the South America Spanish colonies and subsequent political factors in outline; and with a survey of present conditions and problems in Peru.

MOTIVATION:

The pupils of Indian ancestry should be naturally interested in the achievements of a relatively advanced Indian civilization in South America, and should feel a sympathy with the fortunes of a conquered Indian people. Reading extracts from The Conquest of Peru (Prescott) should stimulate interest. Appropriate pictures of the Andes and of Inca ruins will also help.

EVALUATION:

In Grade IV pupils should be capable of answering factual and skill-testing questions. It is recommended that a weekly test sheet be given, and a culminating test on the common core of learning should conclude the unit.

The following list of topics and related questions may offer a possible avenue of investigation.

TOPIC I

The physical conditions

Related Questions

1. Where is modern Peru?
2. Into what physical regions can it be sub-divided?
3. How high is the highest mountain?
4. What is the rainfall in the various zones?
5. What is the vegetation in the various zones?
6. Where do most people live?
7. What is the effect of altitude on the lungs, blood, etc. of indigent natives?
8. What are the climates of various parts of Peru as compared with Northern Alberta?
9. Where do the roads and railroads go, North and South or East and West? Why?
10. What are the difficulties of communications?

TOPIC II

Who were the Incas?
Where did they come from?
What did they do?

1. Where do the Inca legends say that they originated and when?
2. Where was the Inca capital?
3. When was the Empire founded?
4. Which modern countries did it extend over?
5. How did the Incas rule?
6. How did they treat conquered people?
7. What crops did they grow?
8. What animals were domesticated?
9. How did they maintain communication in the Empire?
10. How did they cultivate mountain sides?
11. How did they tax the people, and for what purposes?
12. What records did they maintain?
13. What metals did they mine?

14. How did they build?

15. What was their religion and how was it observed?

16. What kind of people did the Inca government tend to produce - docile, hard-working, frugal people tending to lack initiative and independence.

TOPIC III

The Spanish Conquest

1. What theories led Columbus to the west?

2. What kind of Spaniards migrated to America and for what purpose? - warlike, impoverished soldiers fresh from the conquest of the Spanish Moors - went to convert the heathen, to gain wealth, fame, led by rumors of gold.

3. What was the first wealthy empire to be conquered by the Spaniards (Cortez)?

4. Who was Pizarro?

5. How did he come in contact with the Incas?

6. How strong were his forces?

7. How were the Spaniards armed by comparison with the Incas?

8. How did Pizarro manage to seize the Inca in the midst of his forces?

9. What wealth did the Inca produce as ransom?

10. Why was there so little effective resistance?

11. How was the wealth divided? How much went to Spain?

12. Why did the Spaniards fight each other?

TOPIC IV

The Colonial System

1. How did the Spaniards treat the Indians so that their numbers diminished so rapidly?

2. Why was the capital city moved?

3. Why did the Inca roads disintegrate so rapidly?

4. What is the "encomienda" system, and the role of the Indians in it?

5. When did the colonial Spaniards revolt against Spain?

6. Who were the chief liberators of South America?

7. What form of government was substituted for vice-regal rule?

8. Did the change in government affect all the people or just a favoured few?

TOPIC V

Modern Peru

1. Where are the most densely populated parts of Peru?

2. What is the racial make up of the people?

3. What crops are grown?

4. What animals are reared?

5. What minerals are produced - gold, lead, zinc, copper, silver, guano, iron.

6. What industry exists?

7. What is the system of land ownership - what is a hacienda - what is peonage?

8. How do the bulk of the people live? - housing, food, wages, dress, etc.?

9. What are the chief imports and exports?

10. What is the present form of government - why do governments change so rapidly - in whose hands lies the power to oust a government - how does this compare with the governmental system in Canada?

11. What prospects are there of bettering the standards of living through irrigation, better sharing of land, mechanization, etc.?

PROBLEM I

THE PHYSICAL CONDITIONS

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher Presentation	Examine map of South America for physical features. On individual map of South America note: a) Andes Mountains b) Amazon basin c) West coast desert
		Insert outline of Peru, noting that this country includes parts of each of these three areas. Note the elevation of the highest mountains.
	Pupil Activity	Prepare temperature and rainfall graphs for representative locations of each of the three physical areas and compare with figures from Edmonton - what differences are due to the fact that South America is south of the equator?

Temperature and Rainfall

Station	Altitude	Temperature and Rainfall	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Iquitos (Amazon basin)	347.8	T.	77.5	78.3	76.3	77.0	75.6	74.3	74.1	76.3	76.3	77.2	78.4	77.9	76.6
		Rf.	10.0	10.6	12.0	6.6	9.8	7.3	6.5	4.5	8.8	7.1	8.5	11.3	103.0
Lima (West coast desert)	518.4	T.	72.6	74.3	73.6	70.2	66.0	62.6	61.2	61.0	61.3	63.0	65.7	69.6	66.8
		Rf.	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.1	1.8
Cuzco (Andes Mountains)	11,089.2	T.	52.5	52.2	52.0	51.4	50.5	48.4	46.9	49.8	51.6	52.9	53.8	52.2	51.2
		Rf.	6.4	5.9	4.3	2.0	0.6	0.2	0.4	0.4	1.0	2.6	3.0	5.4	32.0
Edmonton	2,219	T.	8	11	23	40	52	58	63	60	51	41	24	12	
		Rf.	.9	.8	.9	1.1	1.8	3	3.1	2.3	1.2	.8	.9	.9	

	Teacher Presentation	How is altitude represented on maps - - by hachures, layer tinting, shadowing, contour lines. Prepare samples of contour lines representing exalpments, round hills, river valleys, etc. Make cross-sectional drawings from contour lines.
	Teacher presentation to pupils	Discuss adiabatic heat loss in ascending mountains at about $3^{\circ}F$ per 1000' and the attendant changes in vegetation zones. Discuss climatic zones of Peru from the point of view of natural vegetation, the possible economic usage for crops and herds.
Health	Teacher Presentation	What is the effect of altitude on human physiology -

Subject Area	Possible Organization	Possible Activities
		1) Oxygen less at high altitudes 2) Visitors feel faint and weak 3) Indians: population have large lungs and greatly increased no. of red corpuscles in blood, and a purplish complexion due to the excess of corpuscles. 4) Lowlanders cannot work in High Andes.
Social Studies	Class Activity	Collect pictures of South America flora and fauna. - vicuna, llama, chinchilla, cavy, alpaca, jaguar, guanaco, viscacha, potatoes, beans, corn, cotton, etc. tuna, herring, bonito, shark, squid, etc. Paste on a suitable outline map of South America.

PROBLEM II

WHO WERE THE INCAS, WHERE DID THEY COME FROM AND WHAT DID THEY DO?

Subject Area	Possible Organization	Possible Activities
English (Research)	Group activity based on teacher questions	Who were the Incas? Where did they come from? Where was their capital? How large was the Empire? How long did the Empire last? Who was the last Emperor? What crops did they grow? What animals did they domesticate? for what purposes - What was the "quipu" used for? Did they use wheeled carts? Did they use money? What is a terrace in agriculture? What metals did they use? How did they shape rocks for building? What was their religion and how was it observed? How did they communicate with other areas? What kind of boats did they build (used canoes on lakes, sea-going balsa rafts (see Kon Tiki) Why did they remove conquered peoples to other parts of the Empire? How were the people taxed? Who were the ruling class?

All these questions should be answered: if they are beyond the resources of the available reference books, a different method of presentation would be needed. A comparison with North American Indians might be helpful at this point. The teacher may have to present this data if all else fails, by appropriate extracts from Prescott or other sources.

PROBLEM III

THE SPANISH CONQUEST

Subject Area	Possible Organization	Possible Activities
Social Studies	Group Reports	Reports, sketches and maps relating to 1) Henry the Navigator 2) Vasco da Gama 3) Columbus 4) Magellan 5) Cortez 6) Montezuma (or Moctezuma) 7) The Moors in Spain 8) Arms and armour in the 16th century 9) Cannon in the 16th century 10) Ships of the 16th century These reports, pictures and maps should set the stage for the Spanish Conquest of Peru - the basic questions are - 1) How did the Spaniards come to be in America 2) What kind of people were they 3) Why were the natives so easily conquered - use of gun powder, horses, steel swords, armour against slings and arrows, quilted cotton armour. The native "maquahuitl" is no match for a steel sword.
Literature	Teacher reading	The actual conquest should be described at least as far as significant incident is concerned. Emphasize - a) Civil war between Inca and his brother prior to conquest. b) Preliminary voyages of Pizarro, and license from the King to explore, conquer and govern. c) The seizure of the Inca - his ransom. d) The Judicial murder of the Inca. e) The centering of all authority in the Inca made effective resistance by the people difficult. f) The parcelling out of land and Indians in encomiendas, the neglect of agriculture for forced work in the mines. g) Civil war between the conquerors and the appointment of a Viceroy.
	Pupil activity	Write essays, make sketches of significant incidents of the conquest.
Social Studies	Teacher Presentation	The revolt against Spain and the activities of the liberators - Sam Martin, Bolivar, Santa Cruz - should not be dwelt on. Reasons for the revolt - that it was not a popular

Subject Area	Possible Organization	Possible Activities
		revolt, but a revolt of the wealthy ruling classes against Spanish control and that peons were relatively unaffected should be pointed out.

PROBLEM IV

MODERN PERU

Subject Area	Possible Organization	Possible Activities
Mathematics & Social Studies	Class work	Represent by appropriate symbols on a chart or graph the following data - Population 11 million - of every 20: 9 are pure Indians 8 are of mixed blood 3 are pure European
	Class work	Represent on a suitable diagram the following data - Grazing - up to 17,000 feet altitude Potato - to 14,000 feet altitude Barley - 13,000 Wheat - 12,000 Maize (corn) - 11,000 Alfalfa - 10,000 Sugar Cane - 8,000 Bananas - 6,000 Oranges - 6,000
Social Studies	Group work	The dominant economic activities are:- a) Mining b) Commercial farming c) Subsistence farming d) Commercial ranching e) Subsistence herding f) Commercial fishing Committee should be set up to study each area, to prepare murals, flow diagrams, pictures, etc. illustrating each activity. a) <u>Mining</u> More predominantly for copper and lead -find out what copper ore looks like -how is it mined - shafts, adits or open pit mines -how the ore is treated to extract the metal -the uses of copper (free material on copper readily available) b) <u>Commercial farming</u> Crops of most value - cotton & sugar

Subject Area	Possible Organization	Possible Activities

-when are they grown
-what conditions do these crops need
-how crops are planted and tended
-how crops are harvested
-what the crops are used for
(free material on sugar cane, cotton, is available, with actual specimens)

c) Subsistence farming in the inter-montane basins
-what is an inter-montane basin
-how is the land prepared
foot plow - now animal or machine-drawn ploughs
-what crops are grown
-what foods are eaten
-what additional necessities are bought or traded for (Kerosene, clothing, sewing machines, etc.)
-some reference to peonage and tenant farming

d) Commercial ranching (haciendas)
Mainly for cattle and sheep
-what are the best beef-type cattle
-which are the best wool-producing sheep
-how long does it take to rear a steer for market
-how much does a steer eat daily
-what supplements are given for fattening
-why are cattle de-horned
-what diseases are they subject to
-how are cattle marked to indicate ownership
-how can beef be preserved for export
-what by-products are made from cattle

Sheep
-which are the chief wool breeds
-how much wool do they produce each
-when are they sheared - and how?
-how many sheep can be shorn by one man in a day with power sheers
-which are the chief wool-importing countries
-what are the peculiar properties of wool - felting, insulation, dyeing, washing, etc.
-some reference should be made to the wool from alpaca etc.
-some reference for both cattle and sheep should be made to seasonal migration up and down the mountains (transhumance)

e) Subsistence herding
Carried on by Indians in higher and poorer land - sheep, llamas
-why do the herds have to move continually
-live on meat and maize products
-spin wool into cloth

Subject Area	Possible Organization	Possible Activities
		-use dung for fuel -little surplus for sale - some wool, meat traded
		f) Commercial fishing Which ocean currents flow along the Peruvian coast -what are plankton -make a food cycle sketch Plankton - herring, tuna, bonito, dolphin, sharks - sea gulls, pelicans
		What are the chief food fishes found in Peru - tuna, etc. describe and draw them
		-how are they caught seine nets, hooks & line -what does a tuna boat look like -how are fish preserved -what are the by-products - oils, fertilizers, etc. -refer to guano deposits as value as fertilizer
Social Studies Civics	Teacher-led discussions	What forms of government are found in the world -monarchy, oligarchy, despotism, theocracy, plutocracy - define and discuss What forms of government have we in Canada - how is it selected and rejected? Why do Peru and other South American countries often have violent governmental change? Why are there generally only very poor or very rich people in Peru? What is needed to lower the high death rate of 20/1000 - medical, dietetic reasons? How do you suggest that conditions could be improved and by whom? (do not ask for facile but economically ridiculous reasons)
		The Peruvian peasant resists change in his traditional - inefficient methods and does not want a Ford tractor even if he could afford to use it.

REPUBLIC OF PERU

Area, 496,222 square miles

Total population, 10,364,620, last census 1961

Capital city, Lima; population 1,715,971

Percentage of population in cities over 100,000,14

Birth rate per 1,000 - 45, death rate per 1,000 - 20

Percentage of literacy - 42

Percentage of labor force in agriculture - 62

Gross national product per capita (1955), $126

Unit of currency - sol (5.26 cents in 1957)

Leading crops in acreage, 1950: potatoes, maize, barley, wheat, cotton

Commerce, 1956

(expressed in percentage of values)

Total value of exports, $296,000,000; or 5 per cent. of the total export.

Latin America

cotton	28
copper	11
sugar	11
lead	10
oil	8
other	32

Exports to		Imports from	
United States	11	United States	50
United Kingdom	11	Germany	10
Chile	8	United Kingdom	9
Belgium	7	France	4
German	5	Argentina	4
Others	28	Others	28

UNIVERSITY OF ALBERTA

ENTERPRISE OUTLINE

GRADE IV

SECTION D

HOMES THROUGH THE AGES

ENTERPRISE

GRADE IV SECTION D

HOMES THROUGH THE AGES

OBJECTIVES:

I. To help the pupils understand that housing (shelter) reflects to a varying degree the climatic economic and social environment of the people.

II. To promote a general awareness of the development of homes - materials, architecture, comfort, fixtures over the past 25,000 years.

III. To emphasize the scientific principles underlying heating, lighting, ventilation in modern houses.

UNDERSTANDINGS:

I. A knowledge of the reasons for various types of housing construction at different times and in different places.

II. A knowledge of the changing purposes of homes from warmth, shelter and safety in early times to comfort, recreation and convenience in modern times.

III. A basic knowledge of the principles of hygiene, and safety in the home.

DESIRABLE SKILLS:

Ability to:

1. Draw maps and locate places in an atlas.
2. Sketch and colour.
3. Prepare and deliver reports.
4. Conduct and report experiments.
5. Write descriptive essays.
6. Utilize reference books.
7. Deduce facts about climate, economy from pictures.

OVERVIEW:

This enterprise is concerned with the purposes of housing or shelter; with the materials of construction; with the development of architecture; with the adaptation of shelter to climatic conditions; with the principles of insulation, heating and hygiene; and with the development of these facts in time and space - both a history of the past and a survey of the present.

MOTIVATION:

The enterprise could well begin with a display of sketches or pictures of different forms of housing - tipi, igloo, log house, castle, skyscraper, tropical thatched house and proceed to a discussion as to what the purpose of each was or is, and why and how each form is suitable for certain given conditions.

EVALUATION:

Account should be taken of the contributions of children to group work; and of individual reports and research. The class-testing program should be confined to the common core of principles unless a test is compiled which allows of alternates to cater to less than whole class activities and reports.

The following list of topics and related questions may offer a possible avenue of investigation.

TOPIC I

What are the earliest forms of shelter?

Related Questions

1. Which animals, birds and fishes have homes?
   - bees have hives
   - birds have nests
   - some fish have nests
   - beavers build homes
   - foxes, etc. dens
   - bears hibernate in certain places
   - apes build temporary nests in suitable tree locations.

2. What are the purposes of their constructions or locations?

   a) Birds - to rear young in safety.
   b) Fish - generally the same,
   c) Bees - store food, rear young, keep warm.
   d) Foxes - safety, rear young, shelter.

3. Did early man require such facilities, and where did he find them?

   a) Paleolithic man probably required shelter from cold in the glacial period, and before that may have slept in any convenient shelter - tree, cave, etc.

   b) Man is diurnal while dangerous animals generally nocturnal - cold and safety require enclosed space with fire - most conveniently a cave with fire or rocks to bar the entrance.

   c) Caves not usually found by water - means daily trip to drink or some means of carrying and storing water.

   d) Caves used for food storage (dried or smoked), burial, religious (magic) rites; probably involved in differential roles of male and female - male hunts, fights, women rear children, prepare food, clothes.

TOPIC II

Fabricated houses, temporary and permanent

Related Questions

1. When did the last glacial age end?

2. When did man begin, in favorable areas, to cultivate plants, and what effect did this have on his mode of life?
   a) Possibly 8 - 10,000 B.C.
   b) Plants require residence in an area from planting to harvest encourages formation of villages; storage of surplus food, trade with others,

specialization of jobs; war with neighbors, emergence of chieftains.

3. What forms of houses were developed in Neolithic times?
   a) Swiss Lake village of logs.
   b) Mud, brick, flat-roofed houses in Egypt.
   c) Clay and wattle constructions.
   d) Stone houses - (Skara Brae).

4. Which type of dwellings did nomadic hunters and herdsmen use?
   a) All nomadic peoples must use either portable houses or houses readily constructed with material at hand.
      e.g. wigwam - forests
      tipi - plains
      igloo - arctic
      yurt - steppes
      tent - Middle East
      - merely shelter from heat or cold rain and wind.

   In what parts of the world has housing never developed beyond this simple stage, and for what reasons?

TOPIC III

Significant developments in housing, architecture and housing facilities.

Related Questions

1. By what methods can space be spanned for roofing?
   - post and lintel

   arch

   pitched roof

2. What were Roman houses like -
   a) materials - brick, wood, concrete tiles
   b) floor plan
   c) heating and lighting and ventilation
   d) aquaduct, sewage, etc.

3. Dark ages in Europe
   - crook houses, clay and wattle, log houses and stockades.

4. Norman castles - what were they like?
   - motte and bailey
   - stone keep
   - keep and curtain walls
   - why were they built?
   - of what materials?
   - use of space for stores, soldiers, attendants, family
   - fortifications - attack defence
   - furnishings - chairs, beds, etc.
   - water supply, sewage, lighting, heating
   - floor coverings, etc.

5. Late Medieval Houses - not so much for defence as living quarters.
   - use of glass in windows.

6. Elizabeth houses -
   - framed with timber and bricked in
   - why overhanging storeys
   - invention of water closet - plumbing of lead pipe
   - roofing of slates or tiles
   - introduction of coal fires for heating

7. How did the Plague and Fire of London affect housing?
   a) Houses of brick or stone.
   b) Streets wider.
   c) Sanitation improved.

8. Housing in the Industrial Revolution
   a) What caused workers to flock to the towns in the late 18th and mid 19th century?
   b) How were these people housed?
   c) Why were houses built in rows close to the factories?
   d) What diseases were prevalent in these towns?
      - rickets, scurvy, T.B., typhoid, etc.
   e) What preventative measures were taken by the authorities?

9. What new materials have been developed in housing construction in the last 100 years?
   - use of coal, gas for lighting and heating.
   - use of concrete and steel framing.
   - prefabricated parts, mass production.
   - use of plaster board.
   - insulation with rock wool, vermiculite, etc.
   - use of metals and plastics.
   - central oil or gas and electrical heating.
   - electric lighting and powered appliances.

10. What new facilities are needed as a result of modern increased urban population?
    - large supply of water - reservoirs, filtration, purification.
    - supply of power - electricity.
    - supplies of fuel - coal, oil, gas.
    - industrial employment to support cities.
    - transportation, etc.
    - taxation to support municipal charges for telephone, power, wells, etc.
    - apartment houses for single, childless or older people.
    - specialized housage, schools, prisons, hotels, hospitals, hotels, etc.

TOPIC IV

A survey of certain features of dwellings used today, with reference to scientific principles involved.

Related Questions

1. The Eskimo igloo.
   How can a snow house keep people warm without melting?
   Why is the entrance so low that you must enter on hands and knees?

P. Hot air rises and is trapped by the domed roof.

2. How is heat loss reduced in modern Canadian housing?
   - insulation of roof
   - insulation of walls - aluminum foil, dead air
   - double windows

P. Heat is lost by conduction, radiation and convection.

3. How is water obtained, stored, transported, filtered and purified today?
   - control of watersheds - dams, pipelines, sedimentation beds, filtration, chlorine and alum additives.

4. What are the qualities of various materials used in building today?

concrete logs frame buildings brick metal	as regards strength, permanence, insulation, ease of construction

5. What are the advantages and disadvantages of various heating systems?

- open coal and wood fire - enclosed coal and wood fire - gas heating - oil heating - electrical heating - hot water heating	in terms of safety, convenience, cost, efficiency, availability

6. What are the uses of electricity in the home?
   - how can it heat a house and also chill a refrigerator?
   - how does an electric motor work?
   - how do such motors add to the comfort of a house - what home tasks can be taken over by machines?
   - cleaning - (vacuum cleaner)
   - mixing and beating foods (mixer)
   - ventilation (fans)
     etc.

7. How would a house designed for the tropics (hot, dry climate) differ from one designed for Northern Canada in terms of -
   a) Shape of roof
   b) Heating and cooling arrangements
   c) Ventilation
   d) Materials of construction

8. How can accidents in the home be avoided?

9. What purposes does the modern home serve?
sleeping, cooking, storage, entertainment, study (homework for children), hobbies, etc.
and what facilities are therefore
a) essential and b) desirable

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PROBLEM I

WHAT WERE THE EARLIEST FORMS OF SHELTER?

Subject Area	Possible Organization	Possible Procedure
Science/ Nature Study	Pupil picture collection and discussion	1. Which animals, birds, insects, fish have homes? - collect pictures of beaver houses, bee hives, ant hills, spider webs, birds' nests, etc. 2. What are they made of and what is their purpose - what are desirable locations? - establish that purposes are - concealment - safety while sleeping - warmth - rearing young - storing food 3. Why do animals such as moose, deer not have homes, while bears, foxes may have? 4. Under what conditions did early man require a home? a) To sleep at night in safety; most dangerous animals are nocturnal b) To conserve heat and avoid exposure to wind and rain c) To rear young children in d) To store food - in warm lands without any dangerous animals the need for a permanent home may not exist but in the Ice Age in Europe it was essential. 5. Caves inhabited by man from 100,000 B.C. to 10,000 B.C. show that man has used fire for warmth and cooking at least for that period of time. 6. What features would you look for if you were setting up a home in a cave, in arctic weather with dangerous animals around? - floor, level or sloping down to entrance - narrow entrance easily blocked by stones or fire, widening to the rear - facing away from prevailing wind to avoid snow, rain, smoke blown into cave, proximity to springs or river for water, nearness to other caves for mutual protection

Art	Individual projects	7. Make clay models or sketches of Neanderthal, Cro-Magnon man with tools, weapons, clothes, etc. Make large mural of Cro-Magnon cave showing cooking, sewing, cave paintings.
English	Pupil Essays	"A day in the Stone Age" "Making fire without matches" "Making clothes out of skins" "Hunting the cave-bear" etc.

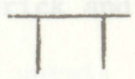
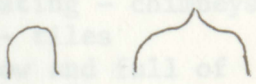
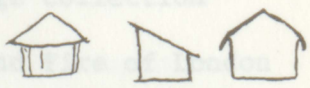
PROBLEM II

FABRICATED HOUSES, TEMPORARY AND PERMANENT

Subject Area	Possible Organization	Possible Activities
History	Teacher presentation and discussion	Discuss- The end of the last Glaciated period in Europe and North America, changes in animal life, changes in topography and climate and present two types of neolithic activity: a) Nomadic hunting and herding b) Agriculture in favoured areas, with semi-permanent settlement in communal villages to protect crops from birds, insects, animals.
Art & English	Pupil Reports	Temporary houses - Sketch and prepare report on: wigwams, tipis, igloos, yurts, tents, other temporary shelters where developed, materials used, method of erecting, advantages and disadvantages, people who use them
Art & English	Pupil/group reports	Permanent houses - Sketch and prepare report on: a) Swiss Lake villages of logs b) Mud brick, flat-roofed houses in Egypt, Mexico c) Stone houses without mortar (e.g. Skara Brae) d) Thatched houses (tropics) or Europe noting where developed, materials used, methods of building & tools used, advantages & disadvantages, adaptations to local conditions. In what areas of the world has housing never developed beyond these stages and why?

PROBLEM III

SIGNIFICANT DEVELOPMENTS IN HOUSING, ARCHITECTURE AND FACILITIES

Subject Area	Possible Organization	Possible Activities
Science	Teacher presentation by pictures, sketches	Development of the vault for space bridging: a) Post and lintel (Egypt, Greece)  b) The arch (Mesopotamia) c) The vault (Rome) d) Fan vaults e) Domes  f) Pitched roofs 
Science, History	Collect specimens, sketch or report on How is charcoal made - precautions in use How do fountains, syphons work	Roman Houses a) Materials - wood, masonry, brick, concrete, tiles - how made and uses b) Floor plans and usage c) Heating, lighting & ventilation - use of charcoal, wood, central heating, olive oil. d) Aqueducts, fountains; for pure water, public baths. e) Sewage - Cloaca Maxima still in use Medieval Period a) Crook houses - how made b) Motte - Bailey castle c) Keep and curtain wall castle why built, of what, when Use of space for stores, great Hall, garrisons, private quarters, windows Furnishings - chairs, beds, tables, floor coverings, doors, portcullis, etc. Water supply, toilet facilities, lighting, heating, food preservation (salting and pickling, drying) Arms and armour, code of chivalry, etc. Fortification - method of attack and defence.

Subject Area	Possible Organization	Possible Activities
		Late Medieval Manor Houses
		Gunpowder made castles out of date - As compared with castles, Manor houses had: Less height, more windows (with glass), carpets, private rooms, more comfort - usually brick and timber.
		Tudor Houses
		Timber frame bricked in Storeys overhung to avoid spring in floor beams
		- invention of water closet - plumbing
Forbidden by Elizabeth I, but ignored....		- use of coal for heating - chimneys - roofing of slates - tiles - streets still narrow and full of refuse - no garbage collection
Use eye-witness reports, Pepys, Dafoe		- refer to Plague and Fire of London 1666; causes of infection, danger of fire, difficulty of prevention and re-building of London with wider streets, use of stone and brick instead of wood.
		Housing during the Industrial Revolution of the 19th century.
		What fundamental invention caused the unprecedented expansion of Industry in the 19th century;
Science	Demonstrate how steam engine works - investigate pioneers of Steam - Trevethick, Watt, Stephenson	Steam power generated by coal. Why did workers leave the country and live close to factories? What kind of housing was built for them?
Health	Public Health Nurse	The housing, water obtained from communal pumps - outbreaks of: typhoid, prevalence of rickets, scurvy, T.B., etc. What preventative measures were taken?
Science	Make coal gas by heating coal in a test-tube with glass tube leading from neck	Use of coal gas for light Use of electricity in late 19th century - refer to Edison, etc.
		New developments in housing in the past 100 years.

Subject Area	Possible Organization	Possible Activities
	Pupil/teacher discussion, based on pictures of modern housing projects and advertisements	- erection of skyscrapers requires extremely strong framework - development of steel and concrete for strength, cheapness and speed of construction. Use of prefabricated module construction Use of plaster-board insulation with rock wool, vermiculite, aluminum foil increased use of metals - plastics chrome and nickel to prevent rust
	Reports Why an open fire is dangerous and wasteful How is electricity made	- use of plastics - central oil, gas or electrical heating; less use of open fires - use of electricity for lighting and power appliances.
		What facilities are needed in a modern urban complex? Industrial employment to support population. Flat land for ease of building. Large supply of pure water; from river or lake; reservoirs, filtration, purification by alum and chlorine.
	How is oil located, extracted, refined?	supplies of fuel - oil, gas, coal
	Where are Alberta oil and gas fields?	supply of power - electricity - roads, sewage, telephone, railroads - specialized forms of housing, hospitals, apartments, motels, hotels, schools, prisons - why can't city people build wherever they want as in a hamlet or village?

PROBLEM IV

SCIENTIFIC PRINCIPLES INVOLVED IN HOUSING

Subject Area	Possible Organization	Possible Procedure
Science	Experiment and report	1. Demonstrate that hot air rises. Discuss this in relation to: a) Eskimo igloo - entrance is below sleeping platform so warm air does not escape.

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Subject Area	Possible Organization	Possible Procedure
		b) Discuss in relation to fires and chimneys: i) in tipis, smoke escapes through hole at top, fresh air enters under sides, ii) construction of chimneys in houses - size of flue, etc. (Franklin)
Science	Experiment and report	2. Heat is transmitted by conduction, convection and radiation - show by experiments: a) Loss of heat in Canadian homes by conduction is reduced by insulation and by building material and double windows b) Loss of heat by radiation is reduced by using aluminum foil faced insulation c) Loss of heat by convection is reduced by insulating roofs.
Science	Experiment and report	3. Air exerts pressure on water, and water sets its own level. a) Refer to <u>water towers</u> supply water to houses by gravity b) Water pipes can force water, by pressure to run uphill - in syphons - demonstrate - explain use c) Demonstrate filtration of water through gravel and sand - use muddy water and filter paper, a fine sand.
<u>Demonstration</u> use batteries and airplane model motor Demonstrate - investigate shape of fan blades, how vacuum cleaner sucks, etc. Pupil or group sketches and report		4. Electricity is a form of energy which can do useful work. a) How does an electric motor work b) How can electricity heat a house and cool a refrigerator c) In what ways are electric motors used to reduce hand labour in a home: - fans, mixers, vacuum cleaners, hair dryers 5. How would a house designed for a hot dry climate differ from one used in a cold climate: - insulated against heat on roof, open sides - high rooms - perhaps built on stilts to allow air to circulate below - use of fans, cooling machines instead of furnaces - use of mosquito curtains or screens

Subject Area	Possible Organization	Possible Procedure

- built of white material to reflect heat, etc.
- refer to scientific principles involved.

6. What purposes does the modern home serve, and what are the:
   a) essential and
   b) desirable factors

   a) Sleeping (separate sleeping space away from cooking and visiting areas)
   b) Cooking, preferably in separate area
   c) Homework, for children, should be apart from other areas for quiet
   d) Entertainment, again should be separate from sleeping, homework areas
   e) Hobbies, play
   f) Storage
   etc.

7. How can fire and other hazards in the home be avoided:
   a) Fire - screens, extinguishers
   b) Poisons - away from children
   c) Light in dark areas
   d) Tidiness - pick up knives, needles, toys, etc.
   e) Dangerous objects put away - guns, etc.
   f) Ventilation - avoid carbon monoxide or dioxide concentrations
   g) Electricity - worn out cords, overloaded plugs, fuses, etc.
   h) Pure water - discuss location of wells, water pollution, chlorination, surface seepage, cones of exhaustion.

Group Report

8. Examine your school - how it is built, what materials are used, drainage of site, sewage, water, boilers, fire precautions, floor area per pupil, use of power, etc.

E N T E R P R I S E

GRADE V (A)

EARLY ALBERTA HISTORY

ENTERPRISE

V (A)

EARLY ALBERTA HISTORY

OBJECTIVES

1. To help pupils understand the natural features and resources of Alberta.

2. To foster a knowledge of the broad phases of Alberta history - explorers, fur traders, settlers in a historical framework.

UNDERSTANDINGS

1. That the history of Alberta is effectively concentrated within the last 200 years.

2. That the development of Alberta has depended on the cooperative activities of a variety of peoples of diverse backgrounds.

3. That geography has largely determined the history of the province.

DESIRABLE SKILLS

DESIRABLE SKILLS

Increased ability to:

1. Carry out research and prepare reports.
2. Understand and interpret maps.
3. Work cooperatively with others.

OVERVIEW

This unit should concentrate on the period 1750 - 1905 that is, from the first fur traders' fort at La Jonquiere to the establishment of Alberta as a province. It is mainly concerned with exploration, fur trading and early farming and ranching, and should exclude detailed discussion of minerals and industry, which are properly studied in the succeeding unit "The Alberta Story of Industrial Development", Unit V(B). As far as is feasible, reference should be made to early journals, contemporary illustrations and other authentic primary data.

MOTIVATION

Pictures of Edmonton 100 years ago and now and of similar contrasting views may introduce the unit. Alternatively, description from traveller's books and journals of local scenes familiar to the students will illustrate the effect of the passage of time. A number of such descriptions and photographs may be obtainedfrom the divisional office.

EVALUATION

At the conclusion of the unit, pupils should have a good knowledge of the major physical features of Alberta - the rivers and lakes - the vegetation regions and the economic pursuits associated with them in the past and present. The development of the enterprise should also account for the higher economic development of the south and the relative stagnation of the north due to the ease of farming on the plains as compared with the colder and wooded north. Test should emphasize the why as well as the what.

TOPIC I

The physical setting and natural resources of Alberta

Related Questions

1. What are the major geological divisions of Alberta
   (a) The canadian Shield
   (b) The Plains
   (c) The Western Foothills

2. How are these features formed and when:
   - discuss igneous rocks, sedimentary rocks, metamorphic rocks, the orogenetic forces involved in the formation of the Rockies, the process and evidence of glaciation in Alberta - lakes, moraines clays, arratics, etc.

3. What are the climatic features of Alberta.

4. What are the chief vegetation zone of Alberta and the characteristic wild-life associated with each zone?

5. What are the chief rivers of Alberta - how could one best reach the Arctic, Pacific and Atlantic Oceans from given locations in Alberta - what portages would be involved. What are the chief barriers to communication by water.

TOPIC II

Fur traders and Explorers

1. Which Indian tribes lived in Alberta about 1750 A.D. and how did they support themselves?

2. What were their contacts with the white man' civilization before 1750.
   - horses from the south
   - guns, blankets, steel knives, kettles traded from other Indians who were in direct contact with fur traders.

3. What led the first fur traders to Alberta - why did they generally represent companies other than the Hudson Bay Company - refer to Hudson Bay Company policy of having Indians come to forts on Hudson Bay, while French Pedlars, North West Fur Co. took the trade to the Indians?

4. How did the direct contact with fur traders effect the Indians?
   - better weapons-traps.
   - better clothing, cooking utensils
   - health affected by liquor and diseases to which they had little resistance.
   - uncontrolled rivalry between traders led to scarcity of beaver and other game fur-bearing animals.

5. In what way did the Indians help the whites -
   - guided explorers and traders.
   - traders adopted indian mode of trapping - canoes, dog sleds, snow shoes, etc.

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6. Who were the pioneers of fur trading and exploration in Alberta:
   - Henday 1754
   - Peter Pond 1777
   - David Thompson
   - Alexander MacKenzie
   - Peter Fidler

7. How was the fur trade conducted by Simpson after 1821?
   - refer to founding of forts, suppression of liquor, conservation of fur bearers, stricter economy.

TOPIC III

Farmers and Ranchers

1. When did the Hudson Bay Co. relinquish control of the Northwest Territories and under what conditions?

2. Did the Hudson Bay Co. wish to encourage settlers or not - what propaganda did they issue to discourage farmers.

3. What expeditions were sent out to investigate soils and prospects of farming and what did the reports indicate.

4. When was the N.W.M.P. organized and for what purposes?

5. What injuries, real or assumed, caused the Metis and indians of Alberta to rise in armed protest.

6. What factors caused the disappearance of the buffalo in the 1880's.

7. How did the Indians and Metis live after the buffalo had gone - discuss treaties, land scrip, etc.

8. How did settlers acquire title to land in Alberta.

9. When and for which motives did ranchers and settlers enter Alberta -
   - refer to recruitment campaign of C.P.R. and Federal Government.

10. What was the life of a pioneer farmer like in 1890 - 1910.
    - how did they build houses.
    - what farm implements were used.
    - how was grain harvested and sold
    - how were schools organized
    - which areas were unsuited to wheat farming, but suited to ranching.
    - which historic trails were used in those days (refer to the Gold Rush of 98)
    - why was the Peace River Block not settled until after 1918.

11. What organized religious groups were active in Alberta and in which areas were pioneer missionaries trying to better the life of the Indians and Metis.

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12. Why did certain towns - Edmonton. Calgary, Lethbridge, Red Deer expand while others did not.
- refer to location, local industries railroads, etc.

13. When did Alberta become a province - what are the boundaries.
- what were the terms of confederation.
- what rights of minorities were preserved and safeguarded by the B.N.A. Act.

14. What relics of pre-provincial days survive locally.

PROBLEM I

The Physical Setting - Natural Resources of Alberta

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher presentation	1. Discuss with appropriate illustration materials and models, the general geological process:- a) The cooling of the earth, b) Pre-Cambrian rocks of the Shield c) The formation of sedimentary rocks clays, shales, limestone, sandstone as in the plains. d) Orogenetical process of mountain buildings, folds, faults, anticlines and erosion, processes which have formed the Rockies. e) Recent geological processes - the Ice Ages and the sign of glaciation visible on maps of Northern Alberta.
	Pupil Group Work repeated on mimeographed maps	2. a) Prepare paper mache or asbestos clay relief maps of Alberta indicating the general geological divisions. b) Collect rock specimens to illustrate typical mineralization of each zone.
	Collect specimens of leaves bark, seeds, label and display	3. On a similar map indicate the vegetation zones of Alberta.
	Pupil graph the data and deduce fitness of areas for crops,etc.	4. Find the climatic data, temperatures, rainfall, days free from frost for Lethbridge, Medicine Hat, Edmonton, Grande Prairie and Fort Chipewyan.
		5. Examine the river systems of Alberta and the portages necessary to travel to the Pacific, Atlantic and Arctic Oceans.
	Group Work	6. Groups should examine wild life of steppes, prairies, park land, coniferous forests and tundra in terms of animals, birds and fish. A sketch or photograph, a description of the animal or bird, a note of the extent of its range and of the animals economic value in the past should be prepared.

The list should include -

a) Animals - buffalo, white tailed deer, mule deer, moose, antelope, cariboo, bears, wolves, foxes, beaver, marten fisher, wolverine, muskrat, musk ox.

b) Birds - ducks, geese, swans, hawks, eagles, owls, grouse, etc.

c) Fish - pike, trout, bass, white fish pickerel, etc.

PROBLEM II

Fur Traders and Explorers

Subject Area	Possible Organization	Possible Activities
Social Studies	Class Activity	1. On a vegetation map of Alberta indicate the locations of the major Indian tribes about 1780. Note the migrations of Crees, Assiniboines, etc. from the East.
Research Art	Group Research and reports	2. Report on Indian tribes - Crees, Chipewyans, Blackfoot, etc. - distinctive housing, clothing, hunting, trapping techniques - include sketches and other art work in the report.
		3. Each group will research the life and work of an explorer and produce - a) A brief biographical sketch. b) A map illustrating his travels. c) If possible brief extracts, from journals or reports, descriptive of what the explorer saw at given points. d) A sketch of some exciting incident in the explorer's travels. - suitable explorers include Pond, MacKenzie, Fidler, Thompson, Frazer.
		4. The maps should be consolidated on a large class map, indicating the areas successively opened up to the fur trade and the location of fur trading posts.
Class work If possible find the equivalent in furs which the Indians paid for each item.		1. Given a list of the major items of goods traded to the Indians - blankets, hatchets, knives, muskets, beads, mirrors, tobacco, rum, steel traps, etc. have the children note the native equivalent of each item and explain what the advantages were of using the traded product, e.g.
		2. Why is a blanket superior to a deerskin?
		3. What advantages does a steel trap have over a deadfall or sinew snare?
Teacher presentation		4. Discuss the formation of the Hudson Bay Co and its early policy of having Indians come to the fort to trade rather than take the trade to the Indians. Explain the terms of the charter whereby the Co. controlled all trade and economical activity of the lands which drained into Hudson Bay.

		5. Explain the policies of the French, who when beaver in Eastern Canada were trapped out, were forced to explore the North West to obtain furs, and that the North West Fur Co. followed this practice of setting up forts in the interior which forced the Hudson Bay Co. to follow suit. The sea-transport of the Hudson Bay Co. to Moose Factory gave them economic advantages over the Montreal based North West Fur Co. who had to move trade goods and fur by canoe, with many portages. Indicate briefly the trade war between the two companies before amalgamation in 1821 and Simpsons reforms of the fur trade.
English	Pupil Essays	6. What did the fur traders learn from the Indians? - how to dress and live in cold climates. - use of canoes, sleds, snow shoes - acted as guides and hunters - methods of hunting and fishing, etc.

PROBLEM III

Farmers and Ranchers

Subject Area	Possible Organization	Possible Activities
Social Studies	Teacher Presentation	1. Discuss the conditions in the West about 1870 noting that the American West was being settled far faster than the Canadian west - that the Plains Indians of the U.S. were engaged in sporadic warfare with the U.S. army and that American whisky peddlers and fur traders were moving into Alberta. In Alberta the control of the fur trade by the H.B. Co. had ended before Confederation, and that no law enforcing agency controlled liquor and other abuses. The Hudson Bay Co. had discouraged settlement in the west by representing that the "Great American desert" extended into Canada and that the land was entirely unsuited to farming. Small settlements of Metis, traders and farmers existed at scattered points in Alberta.
Research	Group research and reports on	2. Groups investigate and report on: a) The formation and work of the N.W.M.P. b) The disappearance of the buffalo about 1884 and its effects on the Indians and Metis. c) The building and financing of the C.P.R. and its effects on settlements in the West. d) The North-west Rebellion - the Frog Lake Massacre. e) The treaty system and the Alberta Indians.

			If possible obtain old settlers and pioneers to speak to the classes and answer questions Read diaries of pioneers to the class
		3.	a) The homesteaders of the period 1880-1914. Conditions under which land could be acquired - what housing was like - what equipment was used? b) Ranching in the same period - breeds of cattle, roundups, marketing, hazards of blizzards, floods, etc. (esp. winter of 1886 - change from open range to fenced range and hay raising for winter food).
			Visiting speaker
		4.	Have local priests or clergy discuss the activities of pioneer missionaries in Alberta - DO NOT allow any attempt by any religious person to deviate from a factual account, and allow speakers from all available church organizations to represent the activities of the sects. This time should not be used as an opportunity to preach a faith, but to report on help given to the Indians and Metis by church or missionary groups.
Map work	Class Activity	5.	Draw maps of roads, rail and river communications of Alberta's major cities, and try to explain why some small fur trading posts developed into cities while others stagnated. Refer to crops, transport by road, river and rail, mineral resources, nature of the terrain.
		6.	If possible, collect and graph population figures at 20 year intervals from 1880 to date and note the rate of population expansion.
		7.	Try to obtain pictures of Edmonton, Calgary at similar intervals of time and note changing features - paving roads and sidewalks; lumber construction replaced by stone and cement. Buggies and carts replaced by trucks increasing size and height of buildings.
History	Teacher presentation		Discuss briefly the conditions of the B.N.A. Act and Alberta's entry as a province - the rights of the province over certain aspects of government and the federal powers over other aspects.

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Note provisions for rights of religious minorities and refer to dual system of school districts in brief.

Group Activities

List the buildings, tools and local people who antedate the formation of Alberta. Interview such people and ask them what life was like then, and which things have changed most - sketch houses, tools, implements and find how old they were, who built them and for what purpose. Perhaps some smaller items may be placed in a school museum and appropriately documented.

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E N T E R P R I S E

V (B)

The Alberta Story

of

Industrial Development

ENTERPRISE

The Alberta Story of Industrial Development

OBJECTIVES

1. Knowledge of the natural resources of Alberta and the extent and location of these.

2. Knowledge of the broad development of extractive processing and distribution industries over the last half century.

3. Acquaintance with the main opportunities for industrial employment in Alberta, with an understanding of the value of education and technical training necessary.

UNDERSTANDINGS

1. That Alberta has a great variety and wealth of natural resources in soils, timber, minerals.

2. That the major artificial resources used in industry are (a) capital and (b) trained employees applied to a natural resource.

3. That natural resources are not exploited in general at the whim of industrial concerns, but that regulatory agencies of the Government have jurisdiction in this field.

DESIRABLE SKILLS

1. Increased ability to interpret maps, charts and diagrams.

2. Increased ability to present verbal and oral reports based on individual research.

3. Ability to take notes of discussions and prepare paragraphs from such notes.

OVERVIEW

This unit continues the story of Alberta begun in unit V (B) (Early Alberta History) from the establishment of the Province in 1905 to date. The period involves a transition from a rural and predominantly farming economy to an urban and predominantly industrial economy. This change has involved movement of peoples from farm to city; increased facilities for higher education and a differentiation, growing progressively greater between living conditions and prospects for employment in country and city. Emphasis must be placed on the necessity of people adapting to changing conditions if their own economy is to keep pace with that of the province generally.

MOTIVATION

Photographs of oil wells, refineries, mining activities, hydro-electric plants, and factories of different kinds will illustrate the diversity of economic activities in Alberta.

EVALUATION

Evaluation should be both formal and informal. Individual reports and participation in group projects should be recognized as well as scores in formally set tests.

TOPIC I

The Natural Resources of Alberta
a) Vegetation, soil, Climates

Related Questions

On map of Alberta locate -
a) Geographical zones - Shield, Plain, Foothills.
b) The vegetation zones - Tundra, Coniferous forests, park lands, tall grass prairies, short grass steppes in S.W.
c) Establish on this map the -
   i) Northern edge of farmlands
   ii) The 15" annual isohyetal line (grazing lands only if no irrigation)

Questions

1. What economic mining activities may be associated with the Shield area - - metallic ores.

2. With the sedimentary rocks - coal, gas, oil, gravel, sand, limestone.

3. What economic activitiesare likely in the coniferous forest zones - logging (dependent on size of trees, distance from markets, availability of transportation), trapping, fishing tourism.

4. What economic activities may be associated with the parklands - mixed farming, cattle, dairy farming, etc.

5. What economic activities may be associated with the tall grass prairies - grain farming, cattle.

6. What economic activities may be associated with the Steppe area - ranching, dry farming (modified if irrigation practised).

The above questions serve to establish the possibilities of the province. Actual activity will depend on more precise data.

TOPIC II

The Industries of Alberta

Related Questions

The leading industries of Alberta are:

- construction (26.6% of value of total production).
- farming (25.3%)
- mining (23.8%)
- manufacturing (20.7%)

Questions

1. If communications indicate the volume of commercial activity, which areas of the province seem to be economically active as shown by road net works.

2. Do these areas coincide generally with vegetation, geology, relief or any other natural conditions?

3. On the basis of the communication net work showing economic activities what potential industries outlined in Topic I can be struck off a list of important Alberta industries? Which potential industries are left when the above process is completed - that is elimination of potential industries excluded by the evidence.

NOTE

It is necessary to select several industries and study them rather intensively. The suggested topics include:

1. The Petro-chemical Industry, esp. Tar Sands.
2. The Cattle and Meat packing industry
3. Irrigated crops in Southern Alberta
4. The Construction industry

TOPIC III
The Petro Chemical Industry
Use "The Alberta Story"
pp 73-83 as a reference

Related Questions

1. How are oil and gas formed?
2. In what geological formations may oil and gas be found?
3. In what types of rock and geographical structures are oil and gas trapped?
4. How is the presence of suitable oil bearing formations located?
5. When and where in Alberta were the first oil and gas wells discovered?
6. How was oil and gas first used in Alberta?
7. When were the Oil Sands near McMurray first reported.
8. What is the composition of the oil sands?
9. What process separates the oil from the sand?
10. What are the successive stages in the plant operation?
11. What has been the effect of this operation on the town of Ft. McMurray?
12. What are opportunities for employment for Northland School Division students?
13. What is the purpose of the Adult Vocational School at Ft. McMurray?
    - what courses are taught?
    - what are the entrance requirements?
    - what are its difficulties?

14. What is the process of oil refining?

15. What are the products of fractional distillation of crude oil?

16. What are the processes of "catylic cracking" and polymerization as applied in the oil industry?

17. Where are the Alberta refineries situated?

18. What subsidiary industries based on petro-chemicals are located in Alberta

19. What is the gross value of the annual output of the petro-chemical industry in Alberta

TOPIC IV

The Cattle - Meat Packing Industry

Related Questions

1. Which is the most profitable way to use land for arable or for stock raising?

2. Which areas of Alberta are primarily used for ranching - why?

3. When did ranching begin in the South West?

4. What kind of cattle were introduced in Alberta?

5. What hazards faced the early ranchers?

6. What is a "round up"?

7. When did the days of the open range end and why?

8. Who were some of the famous cattlemen of pioneer Alberta?

9. What was the origin of the Calgary stampede?

10. What are the distinctive feats performed at rodeos?

11. What are the main centres of the meat packing industry?

12. What various products are obtained from cattle?

13. What is the annual value of the product of this industry.

TOPIC V

Irrigated crops in Southern Alberta

Related Questions

1. When was the first irrigation work in Alberta and who organized it (Mormons 1888)

2. Where, in general, are the irrigated areas of Alberta?

3. What is the annual rainfall in such areas?

4. What are the soils like (pedocals)

5. How is the problem of minerals drawn to the surface by evaporation tackled?

6. Why are sugar beets, alfalfa and other crops suited to growing by irrigation while wheat and cereals are not?

7. How is sugar manufactured from sugar beets?

8. Where are the sugar factories located?

9. What use is made of the beet pulp?

10. Are any subsidiary industries supplied by sugar beet industry (cattle feeding)

TOPIC VI

The Construction Industry

Related Questions

1. What sorts of activity are comprised in this term:

   - bridges, dams, factories, offices hospitals, roads, etc.

2. Which aspects are most profitably studied -
   - pupil choice allowed, but probably dams and hydro electricity
   - roads
   - building industry generally

Dams - hydro-electricity

3. What are the essential requirements for the production of hydro-electricity

   a) volume of water
   b) fall of water
   c) Assurance of steady flow of water, i.e. fed by snow or other unfailing source.
   d) Steep sided valley with rock sides and base suited to water storage- not faulted, fissured or too porous
   e) Where are such sites either in operation or capable of future development in Alberta.
   f) How is the energy of falling water converted to electricity?
   g) How is electric current conveyed from the site to place of consumption - at what voltage and amperage - why?

4. Investigate the construction of one such dam - perhaps Peace River project - how the site was selected, how the river was diverted, the nature of the fill, the cu. yds. of material required, the storage capacity, the power developed, how it is transmitted and the industries served by it.

Roads

1. What classes of roads are recognized on maps of Alberta - what are the characteristics of each class. Which types of road are found locally - how

old are they - when were they constructed, are they serviceable all year round?

2. How is the route taken by a road determined.
   - may follow existing tracks
   - may be surveyed over new country
   - what factors add to costs of construction - hills, rock-work, muskeg.
   - are existing roads in the area routed to avoid any such obstacles?

3. What mechanical equipment is used to build modern roads?

4. How is drainage taken care of?

5. What is the cost per mile of construction?

6. What are the major types of vehicles used on local roads?

7. What authority pays for road construction?

Building Construction

1. What changes in building techniques have taken place in last 50 years?
   - walls no longer load bearing,
   - steel framework supports weight.
   - cantilever construction gives stability and strength
   - module construction
   - use of light weight materials for non-load bearing walls - aluminum, glass, etc.
   - more windows give light since wall is not a load bearer.
   - use of pre-cut or preformed units in steel, wood, concrete.
   - use of reinforced concrete
   - mechanization of work-ready mix cement, cranes to lift loads, steel scaffolding.

2. What trades are employed in modern building -
   - steel workers, carpenters, concrete workers, electricians, plumbers, plasterers, sheet metal workers, etc. - architects, civil and electrical, heating engineers.

3. What is the hourly rate of pay of these people -
   - can any such persons be brought to the school to discuss their jobs?

4. What training must these tradesmen and professional people undertake before being qualified?

5. How are large building constructions financed - who provides the money and on what terms - discuss finance with bank managers if available.

6. Where is the construction industry most active in Alberta - in what fields - can account for this?

THE ALBERTA STORY OF INDUSTRIAL DEVELOPMENT

PROBLEM I

The Natural Resources of Alberta

Subject Area	Possible Organization	Possible Activities
Geology	Teacher presentation	1. Children should have mimeographed base map of Alberta and indicate on these maps the geological divisions of Alberta as the teacher notes them on a larger class map, preferably with translucent overlays. Note the following divisions - - Canadian Shield in far north east plains and foothills of the Rockies both sedimentary rocks. Discuss the formation of these rocks and establish that the Shield area could contain metallic ores but no oil or coal, and vice versa for the sedimentary areas, which could produce coal oil, gas, gravel, sand, limestone. Discuss briefly the ages of these formations.
	Pupil essay on why mining activity is associated with certain formations.	
Science	Teacher presentation	2. As above for vegetation zones - distinguish the tundra, the taiga, the parklands, the tall grass prairie the short grass steppe, the vegetation zones of the foothills with the appropriate vegetation. Discuss each zone from the point of view of possible economic activity, noting the conditions which make the activity possible. How people earn a living from the land (ignore mining) a) the tundra - trapping, fishing) b) the coniferous forests (trapping logging, fishing) c) the parklands (mixed farming, dairy farming, cattle, etc.) d) the tall grass prairie (wheat, cereals, cattle) e) the short grass steppe (ranching irrigation) f) the foothills of the Rockies (ranching, logging, hunting)
	Pupil Reports Explain why these activities are carried on in the area investigated.	
		3. Which climatic controls of rainfall, July or other isotherms seem to limit the northern extension of farming? Why?
		4. The above activities should enable pupils to draw up a list of the possible primary industries of Alberta, though the actual industries will depend on more precise information as to actual deposits of minerals, ease of communications, capital and population available, etc. The purpose yet is to find out <u>potential</u> and by further investigation, establish the actual industries.

PROBLEM II

The Industries of Alberta

Research	Individual and Class investigation Data may be obtained from appropriate Government departmenta	1. From copies of encyclopedias, Canada Year Book or elsewhere, establish the cash value of the products of the following industries. Each group could investigate one or more industry over a period of years: - fur trade - fishing - hunting (sport) - logging (pulp) - mining (coal) - mining (metal) - oil - natural gas - dairy industry - beef cattle industry - irrigated farm lands - cereal production Draw appropriate graphs to determine whether the industry is expanding or not - establish the 4 or 5 main industries for more detailed examination.
Map Work	Teacher presentaion (Gas company road maps are adequate aids)	2. Use map of the province illustrating road, rail and airport facilities. From it and the vegetation map of Alberta establish which areas of the province are so economically active as to require service by good road networks. Do these active areas coincide generally or exclude certain geographic or vegetation zones, or zones of physical relief.
		3. On the basis of the communication net, if this displays accurately the economic activity of an area, certain of the potential industries noted in Problem I may be regarded as relatively unimportant. Which industries are these: - trapping - logging (in the north) - fishing - mining (metallic) Is this assumption borne out by the data found in 1. above?
Graph this data		Note the leading industries of Alberta as: - construction 26.6% - farming 25.3% - mining 23.8% - manufacturing 20.7%
Class discussion		5. A choice should now be made of 2 or more or so industries for more intensive study - suggested: 1) Petro-chemical industry (oil sands) 2) Construction (dams, buildings, roads). 3) Cattle ranching 4) Irrigated crops

PROBLEM III

The Petro-chemical Industry, esp. The Athabasca Tar Sands

Subject Area	Possible Organization	Possible Activities
Geology	Pupils draw cross sectional map of oil/gas bearing formations and explain how gases and oil are formed and trapped	1. Show film (if possible on how oil and natural gas are formed. On mimeographed map of Alberta geology, plot the oil and gas fields in red, and the sedimentary formations in brown. Why are the oil and gas fields not found in the Shield or Rocky Mountain areas?
	Class instruction. Class make appropriate notes and sketches	2. If available show film or film strip, or have expert come in to discuss geophysical prospecting for oil-seismograph.
		3. Find out when the Tar Sands were mentioned in history, and about the early efforts to use the sands.
		4. How large are the tar sand deposits - map them, find average thickness, then calculate rough volume and yield of oil
	Write to GCOS for specimens of oil sand, and explanatory material on plant operations & layout. Pupils should make an individual report with sketches, diagrams on the GCOS operations	5. What is the composition of the oil sand can you extract any oil from the specimens in the classroom by heating, boiling, etc.
		6. What process separates the oil from the tar sands at McMurray?
		7. What specialized machinery and processes are used.
		8. How is the product to be moved to markets.
		9. What has the effect been on the town of McMurray?
		10. What is the purpose of the Adult Vocational School at McMurray - what trades & subjects are taught? - what are the entrance requirements - what problems does it face.
CHEMISTRY	Teacher/Class discussion if expert not available	11. What is the nature of crude oil - can it be used as is? - explain the terms: "fractional distillation" "catalytic cracking" "polymerization" in the oil industry.
		12. List the products of the petro-chemical industry and if necessary explain the uses.
		13. Note the location of Alberta's refineries, oil pipe lines.
		14. Note the value of the petro-chemical industry in Alberta.
		15. How does the government regulate the oil industry- by what right.

NOTE

The end result for the pupils is that each should complete for himself a note book on the oil industry with appropriate sketches and photographs, and should have the opportunity to talk with men engaged in the industry if at all possible. The end product for the class will be geological specimens, minerals, diagrams and maps.

PROBLEM IV

The Construction Industry (Dams) (Select certain aspects of construction)

Subject Area	Possible Organization	Possible Activities
	Discussion. If desired, one group can study dams, one roads others buildings Class make appropriate notes	1. What are dams for? Elicit answers - - irrigation - control floods - provide hydro electric power - provide water for industrial and domestic uses - most dams have multiple uses Some reference to beaver dams may here be appropriate - why and how they are built.
	Let pupils answer to define and identify.	2. What are the requirements for dam building. Elicit responses - - sufficient volume of water, steady source - steep valley with impervious walls and floor. - industrial or agricultural use for the water or power
	Teacher presentation with illustrative material	3. Discuss the site, construction and usage of one particular dam, e.g. Nechako dam, Peace River project - how the site was selected and why, how the water was diverted, the shape and thickness of the dam, nature of the fill, any special difficulties, significant statistics, amount of water stored, power generated.
	Science Demonstration	Demonstrate that when a wire is passed between the poles of a magnet, electricity is induced in the wire. Apply this demonstration to hydro-electricity - the current rotates wires in a generator, current is induced, either A.C. or D.C. transferred to high voltage and transmitted by wires, and reconverted to usable voltage on site. Radius of transmission about 600 miles.
	Teacher presentation	Discuss possible dam sites - Alberta rivers, - Peace, Athabasca, Slave, Bow, etc.

The Construction Industry (Roads)

Subject Area	Possible Organization	Possible Activities
Map work	Pupil investigation and reports	1. On a map of Alberta what classes of roads are recognized - define each class.
Essay, Art & Map work	Draw a picture of the road as it is, i.e. on the spot to confirm the essay	2. Write a description of a section of road near you, define the class, the surface, travel on it in summer and winter. Map the local road and rail communications. Why and where do people build roads - establish. - not necessary for horse, sled, etc. - needed for wheeled transport - how route is determined, follow existing patters (of game) or surveyed - what are surveyors looking for? obstacles such as rockwork, muskeg, rivers, swamps, steep grades, which add to cost.
Art		Draw pictures or collect photos for a mural showing modern road building machinery - surveyors, tree fallers, burning the brush, bulldozers, scrapers, asphalt laying and rolling, etc.
	Research topic How does this compare with road building in the past - Incas or Romans	
	Discussion. Have a man familiar with road building or maintenance discuss his job, visit and examine the equipment. Ask who provides the machinery and who decides what work is to be done locally	Write notes on - " Mr._____'s work" Write Essay "Why we need better roads" or similar.

The Construction Industry (Building)

Subject Area	Possible Organization	Possible Activities
	Teacher led discussion -use pictures of offices or houses 50 yrs ago and apartments or office buildings today	1. What differences do you notice, and how do you account for these - establish: - building now larger and much higher - reason - land is more expensive, businesses larger, inconvenience of sprawling buildings, ease of communication and control - buildings now have steel framework - reason - - additional strength, cheaper. - buildings now have large expanses of glass - reason - walls no longer load bearing - do not support weight. - Wood has largely gone out of use as a material for frames and walls - reason - fire hazard, warps & rots, requires painting to remain attractive. Point out, of course, that log or frame houses are still cheap, warm and sat-

		factory if properly planned, maintained and heated, but that this style is not typical of the construction industry, which is devoted more to steel and concrete.
	Pupil research	Investigate the life, achievements and styles of architecture of modern archictects, or investigate architecture in Egypt, Greece, Middle Ages, 18th Century & compare them with todays from point of view of: - adaptation to climate - beauty and style - materials used - facilities available
Art	Make appropriate sketches to accompany notes.	
	Interview and notes	List the tradesman used in this consctruction, find the training and rate of pay - talk to them (interview with formal list of questions) if any such live or work nearby.
	Interview and notes	Interview a bank manager about how buildings are financed and paid for.
		Find out what large construction works are now underway in Alberta and in what fields - account for such data as are found.
	Report	Find out how the government regulates the building industry - Workmen's Compensation, Building Codes, etc. fire regulations, etc.

PROBLEM V

It is not intended that this outline should list and investigate all industries which the pupils may wish to study, so no further notes will be given. It is hoped that if the industries are investigated, that the teacher will consider providing this office with a brief outline.

ENTERPRISE OUTLINE

GRADE V (C)

Compare the lives and customs of the Indians of the Plains of North America with those of the nomadic Mongolians of the plains of Central Asia

Based on an outline prepared by teachers of Bishop Piche School, Fort Chipewyan, Alberta

GRADE V (C)

Life on the Plains

Compare Indians of the Plains with nomadic Mongolians

OBJECTIVES:

1. To promote further realization that the Indians of the Plains are truly a part of a very large race of mankind that has representatives in many parts of the world.

2. To deepen the appreciation for the Indian heritage by further exposing students to other aspects of development of other peoples of the Mongoloid race.

3. To help promote the realization that since history began, descendants of Mongols have held and continue to hold important positions in the development of world civilization and history.

4. To realize that human societies may make varied responses to similar environments.

UNDERSTANDINGS:

1. A further knowledge of the Plains Indians, their history and their possible role in Canada's future.

2. A knowledge of the problems and achievements of the Mongol nations and an understanding of the reasons for the similarities and differences between them and the Plains Indians.

3. A knowledge of the conditions that have contributed to the development of the similarities and differences that have arisen between the Indians and Mongols even though both are primarily plain dwellers.

DESIRABLE SKILLS:

1. Increased ability to solve problems and to think critically.

2. Increased expression through language and the arts.

3. Increased capability in organizing and carrying out group activities.

4. Increased ability in locating and interpreting information, in making oral and written reports, in using and understanding maps, in making and using charts, graphs, diagrams, and tables, and in organizing events into a chronological framework.

OVERVIEW

The teacher may prefer to select and compare the culture of one Indian Tribe (e.g. Blood) with that of the Mongols rather than study Plains Indians in general. Whether or not this is possible will depend on facilities available in the form of references, etc.

This unit could be developed as a very comprehensive study in which each committee would spend almost all the time available in studying only one of the problems. Since this may take up too much of the school year, it is suggested that an arbitrary time limit of eight to ten weeks be set up with the various activities given a predetermined portion of this time.

MOTIVATION

A period of two or three days should be used in the development of interest in the subject. Questionnaires asking pupils their opinion of their relation to other world peoples may be a way of stimulating interest. Films and pictures should be made available. Class discussions will, no doubt, raise many questions and wherever possible, an attempt should be made to find the answers as the unit progresses. Problem I in the following outline could conceivably be included in the motivation exercises. As the end of the exercises the pupils should be made aware of the various problems of the unit. They should then spend some time planning with the teacher how to best attack the problems while using the available time and facilities to the best advantage.

EVALUATION

By the administering of subjective and objective tests, whether they be given at the conclusion of each problem or only at the conclusion of the unit, and by observation of individuals as the work is carried on, the teacher should gain an accurate idea of the pupils' achievement always bearing in mind the objectives of this unit.

For further information regarding evaluation, it would be wise to consult the Elementary Curriculum Guide for Social Studies - Enterprise (Interim) 1964.

The following lis t of topics and related questions may offer a possible avenue of profitable investigation.

TOPIC	Related Questions
1. The environmental setting	What is the extend of the grasslands of North America and Central Asia? What climatic conditions prevail in these areas? Which animals are found on these plains? What animals, if any, are common to both areas, and which are distinctive of one area?
2. The racial connections between the Indians and the Mongolians	Where did the Indians come from and when? What is the evidence? If Indians and Eskimos both came from Asia, why are they so dissimilar in language, customs and physique?
3. The Indian and the Mongolian impact on world history	When did these races first come to the notice of the western world? In what terms did the west regard them? How did Jenghiz Khan come to conquer China, Persia and Eastern Europe? Why did the Plains Indians not found a similar empire? Is the answer to the preceding question found in climate, geography, resources or in social organization or in a combination of factors?
4. Food, clothing and shelter	What advantages did the Mongols derive from having domesticated animals that the Indians did not derive from the pursuit of the buffalo? Which animals did the Indians domesticate? Could they have domesticated any others? How did the Indians cook and prepare food? Did the Mongols do the same? Compare the structure of the wigwam and the yurt. In what respect do they differ and which appears the superior style? Compare and contrast the form of clothing. Which was the better adapted for the climate and for horse riding? Which seems the more picturesque? What is the significance of the Indian feathered head-dress?
5. Transportation and Communication	When did the Indians acquire the horse? When did the Mongols acquire it? Did the Mongols use wheeled vehicles? Is the travois an effective substitute for the wheel? How did the Plains Indians travel before the horse? Is the horse essential for buffalo hunting? Is it essential for herding?

	Both the Indians and Mongols migrated. Did the same motive impel both?
	The Plains Indians communicated by pictograms, by smoke signals and by a sign language. Find out what you can about each.
6. Social Customs	What circumstances led to the Mongols having "Khans" or kings while the Indians did not? Is this connected with the difference between hunting and herding?
War	Armed with the same weapons as the Indians, the Mongols created a vast empire. How did this come about? The Mongol empire disintegrated quite quickly. Why was this?
Education	What was an effective education for Indian boys and girls in the past? Would education in todays terms have been of any help to Mongol or Indian? Is the same education of the same value today?
Government	How was the individual controlled or protected by the larger social organization?
	Who made important decisions such as engaging in war, movement of the tribe, etc?
Individual Status	What was the division of labour between men and women? How did men gain importance - through deeds or through possessions?
Religion	Was religion organized through priests or was it individual? What religions are now practised by Indians and Mongolians?
7. Present Role in Society	Both the Canadian Indians and the Mongolians now live within the borders of countries controlled by other races and the traditional life is in some degree inadequate. Why is this? Was the traditional life better or worse than present conditions? In what respects?
	What occupations are any of the class attracted to which are not traditional?
	What preparation is needed for these preferred occupations?
	What is the position of the Mongolian in present day society in the U.S.S.R. or in the Chinese orbit?

The above are possible topics for discussion and research by the class, groups of children or single children. They are not prescriptive since the resources available in each school will differ.

It should be remembered that the culmination of an enterprise is <u>not</u> an identical set of notes in the possession of each member of the class, but a pooling of the knowledge gained by several methods of exploration.

PROBLEM I

THE ENVIRONMENTAL SETTING

Subject Area	Possible Procedure	Possible Activities
Social Studies	Teach	Map of World, location of Mongolia and Alberta.
Math	Pupils	Prepare charts showing temperatures in July and January in each area with annual rainfall.
Social Studies	Pupils	Map grasslands in Canada and Central Asia estimating area of grassland.
Art	Group Project	List and draw animals common in Asia and Canada, and those found only in Canada and only in Asia.
Literature Research		Which animals can be domesticated?
		Can descriptions of Mongolian and Alberta scenery be found?

PROBLEM II

RACIAL CONNECTIONS BETWEEN THE INDIANS AND MONGOLIANS

English	Committee Reports	1. How do Indians resemble Mongolians physically?
		2. What evidence is there that Indians did not originate in the Americas?
		3. How could the Indians arrive in America 10-20,000 years ago? (Prepare maps to illustrate).

PROBLEM III

THE INDIAN - MONGOLIAN IMPACT ON WORLD HISTORY

Language	Committee reports	1. The Huns and the Fall of Rome.
		2. Genghiz Khan - youth - rise to power, tactics, extent of victories, his successors.
		3. Conquest of Huns by Cossacks and Russions - Yermack.
		4. Career of Babur in India.
Social Studies		5. Prepare map showing extent of Mongol conquests 1200-1250.
		6. Career of Tamerlane.
		Prepare map of Canada showing present locations and migration routes of Indians in historic times.
		Report on careers of famous Indians in North America - Iroquois, Riel Rebellion, Pontiac, Sitting Bull, Chief Joseph, etc.

PROBLEM IV

FOOD, CLOTHING AND SHELTER

Subject Area	Possible Procedure	Possible Activities
Social Studies Language	Committee Reports	1. How buffalo were hunted. 2. Description of pemmican, feasts, etc. 3. The food of the Mongols - blood, meat, milk, etc. Communal hunts.
	Visiting adult trapper	4. How other animals were trapped.
Art	Class Mural	Draw hunting scenes.
	Pupil Project	Make replicas of bows, spears, headdresses tepees, yurts, gloves, belts. Display moccasins and other skin clothes and differing pattern for different tribes.
Social Studies	Teacher	Principles involved in housing for nomadic people - ease of movement - extreme temperatures - reasons for migration - exhaustion of grass for grazing - drought, fuel, water, making felt and buckskin, relative advantages of each form, yurt, and tepee. Importance of horse in movement and hunting. Indians never used wool or milk of animals.
Art	Individual Project	Draw and colour Indian men and women in full dress. Ditto Mongols - Note Indian garments untailored, whereas Mongols did cut garments to fit.
	Class Project	Compile book of Indian Lengends.

PROBLEM V

COMMUNICATIONS AND TRANSPORTATION

Language	Teacher	Communication need not be by word or by writing. Ideas can be conveyed by mime or by signs or pictograms illustrating ideas without words. Give examples of Egyptian or Babylonian pictograms. Give samples of Indian sign writing.
	Pupil activity	Have class try to write simple messages. "I will shoot a moose tomorrow morning, etc.
Social Studies	Teacher	Why did Indian and Mongol have to move repeatedly - grass, game, cleanliness, weather, changes, etc?
Art	Group Mural	Draw horse travois, tribe on the move.
Science	Group Project	Trace the development of wheeled vehicles. How did the Indians obtain horses? What differences did it make in their culture?

PROBLEM VI

SOCIAL CUSTOMS

Subject Area	Possible Procedure	Possible Activities
Social Studies	Teacher	Head discussion on possible ways of government - monarchy, tyrants, plutocracy, democracy with examples from history. Can the government of Indians and Mongols be placed in one of these classes? Discuss advantages and disadvantages of each in peace and war. Is repidity of decision more necessary in certain circumstances than consensus?
English	Pupil Essay	Describe an Indian raid on another Indian camp.
		Describe a Mongol invasion from the point of view of the invaded.
Art		Draw and colour an Indian warrior or a Mongol soldier.
Social Studies	Discussion and Class list	What did an Indian boy or girl need to learn from adults to fit him for life?
		What do the same boys and girls need to know now and for what purposes?
	Discussion	What is "wealth" in Indian and Mongol terms? Is this definition still true today? Why?

PROBLEM VII

WHAT IS THE PRESENT ROLE IN SOCIETY OF THE INDIAN AND THE MONGOL

Social Studies	Discussion	What is a reserve? How did these areas come about? What was their purpose?
English	Essay	What jobs do Indians do? What jobs do the children wish to do? Are they all confined to the reserve and its environs?
	Discussion. Bring in adults	What are the advantages and disadvantages of leaving the reserve?
	Community Development Officer, or Band Leader, visiting specialist employers	In what respects do white and Indians families differ in their modes of life? Why? Is the difference one of money alone? Can money be obtained while preserving a traditional mode of life?

CULMINATION

Display of art work, collections of materials, presentations by groups on various topics to other classes and principal.

Teacher should keep diary of the progress of the enterprise with frank comment on class interest and materials available, with suggestions for improvement of the unit.

ENTERPRISE OUTLINE

GRADE V (D)

TRAVEL, TRANSPORTATION AND COMMUNICATION

ENTERPRISE OUTLINE

GRADE V (D)

TRAVEL, TRANSPORTATION AND COMMUNICATION

OBJECTIVES

1. To acquaint the pupils with the sequential development of modes of transportation and communication.

2. To acquaint the pupils with the scientific principles behind the development of powered transportation and modern communication systems.

3. To help the pupils realize the changes in social behaviour, general knowledge and political activity which is associated with changes in communication and transportation.

UNDERSTANDINGS

1. That the people of modern countries are now more aware than ever of important events and trends in places far from the immediate environment and are correspondingly affected.

2. That modern communications and transportation do not, correspondingly, as before restrict knowledge and opportunities to the resources of a few square miles.

3. That products from all over the world are interchanged by world trade and are available to augment local resources, with consequent results in industry, diet, clothing, etc.

DESIRABLE SKILLS

1. Knowledge of the principles of the steam, internal combustion and electric motor.

2. Knowledge of the principles of the telegraph, radio and television.

3. Ability to sketch, summarize the development or operating principles of machinery, etc.

OVERVIEW

This enterprise is concerned with the sequential development of a number of topics. In many schools ample evidence exists of this - canoes and diesel powered tugs are seen on rivers; horses, dog-sleds and modern trucks are seen on the roads; airplanes are in common use. On the other hand facilities for seeing radio stations, television, printing presses are few. The major stress could be placed on transportation - its history the inventions that led to more speed, safety and carrying capacity rather than on communications. The social consequences of these developments should also be pointed out.

MOTIVATION

This enterprise could well begin by a display of ancient means of travel, or of the most modern methods - jets, monorails, rockets, etc.

EVALUATION

The intent of the unit is not to memorize names and dates of inventions and inventors, but to trace developments in broad outline, eg - travel on land, sea and air, by natural forces (wind) muscle power, steam, internal combustion engines. The effect on social and economic life should be developed. Rather than test such items as "when was the first steam propelled boat invented", it would be better to ask "what difference in ocean transportation resulted from the employment of steam as a driving force".

TOPIC I

TRANSPORTATION AND COMMUNCATION IN THE ANCIENT WORLD

Transportation	related Questions
Land	1. While domesticated animals are used for carrying burdens, and where? East Asia - ass, cow, horse, yak, camel, elephant, buffalo, reindeer, dog. America - llama, dog
	2. Which animals are used for draught purposes and with what equipment? - horse (horse collar invented 1000 A.D. chariot, cart) - ox (with yoke) - dog, reindeer (harnessed to sleds or toboggan or to carts) - etc.
	3. What are the stages in the development of the wheel?
	4. What nations of the past developed extensive road systems? How were they constructed and maintained? What advantages were derived from them? (Roman Roads, Inca Roads) How did Roman and Inca Roads differ?
	5. What promoted the development of land transportation in ancient times? (sources of power: philosophy of science - Hiero's engine regarded as a toy)
Sea	1. Trace the development of the boat through the stages of raft, dugout, birch canoe, reed canoe, kayak, planked boat, galley (Rome and Carthage) square sailed boat, lateen rig (Indian Ocean)
	2. Discuss defects in boats of antiquity - hogging, teredos and marine growths, lack of navigational equipment meant staying close to shore, fear of unknown monsters and conditions.
	3. Discuss naval battles and voyages of antiquity (Salamis, Hanno's voyage, etc.)
Communications	1. What is writing? What different systems are extant? What is the origin of our system? What extinct systems are known? Refer to Roman alphabet, Russian alphabet, Persian, Chinese, Hindi, if specimens can be obtained. Ancient writing - Egyptian, Babylonian, Greek.
	2. What advantages are derived from writing? - permanence and accuracy of the record - ease of access to readers - saves time and employment of messengers, etc.
	3. What other methods of communications may exist? a) sign language (Plains Indians) b) smoke signals c) drums, etc. d) quipu

4. What materials were used in writing?
   - clay tablets
   - papyrus, pen and ink
   - stone and chisel
   - wax tablets and stylus
   - parchment and vellum

5. How were ancient scripts deciphered
   Champollion - Egypt
   Michael Ventris-Minoan Linear B.
   etc.

TOPIC II

TRANSPORTATION AND COMMUNICATION BEFORE THE STEAM ENGINE REVOLUTION

Land

1. What changes took place in land transportation between 400 A.D. and 1860?
   a) refer to stage coach and Pony Express essentially no change on roads.
   b) discuss the development of ships for the Viking ship, Medieval round ship, 16th century galleon, ship of the line (Victory) clipper.
   Refer to early oar-propelled submarine.

Communications

1. Monastaries and illuminated scripts made by monks.
2. Invention or introduction of movable type by Gutenburg - related to Renaissance and Reformation.
3. Manufacture of paper
4. Introduction of news letter (Fuggers) and periodicals (The Spectator, etc)
5. Use of flags in Naval warfare and semaphore signals on land.

TOPIC III

TRANSPORTATION IN MODERN TIMES

Steam (land)

1. What are the working parts and principles of the steam engine?
2. How was the steam engine applied to land travel?
   a) Trains - where was the first train used?
   Why are they run on tracks?
   Why and what is a "Standard guage"?
   What sort of goods are best transferred by rail?

Steam (Sea)

1. When was steam applied to ocean travel?
2. Why did the screw supercede the paddle wheel except on rivers?
3. What advantages followed from the use of steam for power?
4. When did iron and steel replace wood as a building material for ships? What are the advantages (increased rigidity, less easily damaged, less liable to fire, longer life)

5. When and why did oil fired boilers replace coal fired boilers?

6. On what principle is the submarine constructed? For what purposes is it suited?

The Internal Combusion Engine

(Land)

1. What are the essential parts of a gasoline engine - cylinder, piston, spark plug, coil, distributor, battery, carburetor. How do each of these function?

2. What advantages does it offer over the steam engine?
   a) Lighter
   b) More efficient
   c) Fuel easily stored - no ash or residue of products of combustion.
   d) No time required to warm up or develop pressure.

3. How does the diesel engine work? In what respects does it differ from the gasoline engine?

4. How does the turbine work?
   Refer to Parsons and the ?Turbinia" at the Naval Review.

5. How did the c/c engine affect:-
   a) Road development
   b) Personal travel habits
   c) Other transportation services
   d) Congestion in cities - refer to traffic control, lights, roundabouts, clover leafs, parking.
   e) How did it affect farming?

(Sea)

Refer to outboard and inboard motors, tugs, barges, ocean going ships.

What are the problems involved in flight?
a) lighter than air machines.
b) heavier than air machines.

Refer to Montgolfier balloons, seige of Paris 1870, Zeppelins R101 - danger of fire and lack of manoeuv r ability largely abandoned except for U.S. Navy blimps and coast guards.

Heavier than air flights -
- difficulty is light and efficient source of power - impractical except for gliders until i/c engine invented.
Refer to pioneer flights - Wrights, Bleriot, etc.
- change from wood and fabric to metal frame and skin about 1935.

Invention of jet engines by Whittle, etc.- ran jet, turbo jets, etc.

Rocket development by Chinese, Congreave, Goddard, Van Braun.
- use of V2 in W.W.II
- recent development - principle of thrust - fuels used - space flights, etc.

Development of helicopter - Da Vinci, Sikorsky, Bell - present uses - principles of operation.

Effect of air plan on travel and war - bombing, mobility, dispersion of troops.

Relative advantages and disadvantages of transport by land (road, rail) sea and air - what sort of goods are economically moved by each form of transport?

COMMUNICATIONS IN MODERN TIMES

Visual (print)

1. Why were daily newspapers introduced - affect on electorate - influence on public opinion - party papers and point of view role of newspaper - to inform or to influence.

   Inventions related to print - linotype, rotary press, typewriter, monotype, teletype.

2. Introduction of postal service by Rowland Hill - cheap, pre-set rates.

3. Special form of writing - Braille.

4. Photography - Daguerre, J.C. Maxwell, Eastman.

Auditory

1. How can sound be transmitted by electricity -
   - Morse code
   - Bell and Edison (telephone)
   - Phonograph (Edison)
   - Atlantic cable.

2. How can sound be transmitted by radio waves -
   - Marconi, Lee de Forest

3. How can sound and picture be transmitted by radio waves - television - Baird and Jenkins

4. Tape recorder, dictaphone, motion pictures, Telstar, satellites and laser beams, radar.

TOPIC IV

Effects of rapid travel and Communication on Modern Society

1. People now concerned and involved in political and social events throughout the world - informed of events in hours instead of weeks.

2. People do not now generally live and die within a few short miles of their birthplace - move to work - travel for holidays and entertainment - obtain food from other provinces and countries.

3. People assailed by advertising, slanted or biased news from books, papers, radio and television - how to recognize truth?

4. Local way of life becoming difficult to preserve - tending to develop standardized dress, speech, habits, foods and values, school curricula, etc.

5. Is (4) either good or inevitable?

PROBLEM I

TRANSPORTATION AND COMMUNICATION IN THE ANCIENT WORLD

Subject Area	Possible Organization	Possible Activities
Art, Social Studies	Divide the class into two groups, one to investigate land travel, one to investigate sea travel can be done simultaneously	A. (1) Land travel. On a large map of the world locate the areas where draught and pack animals were used - dog, horse, elk, reindeer, ox, ass, camel, yak, elephant, llama, buffalo. Draw pictures of each animal with a brief natural history - discuss special equipment such as howdah, sled, etc.
Art	Group Activities	(2) Make a mural to illustrate the development of the wheel from log, rollers, carts, chariots, coaches, Roman Roads, Inca roads, method of construction. Emphasize that ancient transportation was limited to animal power which was cheap. Steam engine (Hiero's engine) invented but not applied to practical purposes.
Art, Science	Group Activity	B. (1) Sea Travel. Make a mural showing the development of the boat through the stage of floats, log rafts, dugout, planked boat, galley (Carthage, Greece, Rome) square sail and lateen rigs (Indian Ocean).
	Individual Reports	Make sketches and describe various canoe forms - dugout (B.C.) Kayak (north) reed boat (Peru) coracle (Middle East, Wales), catamaran (Pacific) bull boat (West). Locate areas of use on a map. Discuss the movable features and limitations of each type. Refer to teredos, barnacles, hogging.

PROBLEM II

TRANSPORTATION & COMMUNICATION BEFORE THE AGE OF STEAM

Land	Teacher presentation	Discuss the fall of the Roman Empire and the general disintegration of society - roads not rebuilt after 250 A.D. In Egypt - trade restricted to local markets, rise of Islam, invasions of Vikings. The Catholic church alone retained the tradition of letters till the rise of Universities. Effect on travel - pack horses and heavy carts alone travelled the trails and disintegrated roads. No extensive change in land travel to days of Steam - refer to stage coaches, Red River carts, Pony Express as variants of earlier methods - Pony Express similar to Mongol Post Riders
	Sketches, report to add to mural	

Sea	Mural Painting as large group project based on a time-line. Report on famous battles and voyages - Sluys, Lepanto. Armada Trafalgar - Magellan, Vancouver, Cook, etc.	Trace the development of the ship through Viking long ship, Medievel Cogs & Round ships, the Henry Grace, a Dieu, Elizabethan ships. Ships of the line (Victory) to the Clipper ship. More changes in shape and sail plans - distinguish between square sail and fore and aft sails. Refer to diet and scurvy on ships. Some mention of early submarines could be made.
Communications	Teacher presentation	Refer to hand-written books lettered by monks (Books of Kells), restriction of learning because of scarcity of books and restricted opportunity for learning to read. Introduction of printing (from Chinese) and effects on popular opinion - books printed for all to read - political and religious pamphlets aided Luther and other reformers like Erasmus. Revival of interest in the classics. Introduction of news-letters in the 16th century (Fuggers) and periodicals (18th century)
	Find out the meanings of some Maritime flags and semaphore signals	Use of flag signals in Navy, 18th century and use of land semaphore (Napoleonic Wars) Use of Heliograph in war

PROBLEM III

TRANSPORTATION & COMMUNICATION IN MODERN TIMES

Land Science	Demonstration	Use model steam engine to demonstrate principles of steam engine - make sectional drawings to illustrate piston, cylinder, valves and conversion of linear motion to rotary motion
	Research reports	Report on the pioneers of steam - Hiero, Newcomen, Watt, Stephenson. Sketch early steam engines and train - add to time line mural. Discuss trains - - when was the first passenger train in service - how did tracks & flanged wheels develop (coal mines) - what is "standard guage" - investigate the building of the CPR and difficulties encountered. - effect on Riel's rebellion, settlement of prairies, disappearance of buffalo. - what goods are best transported by rail. - where are the main railroads in Canada - place them on a map of Canada - when and why did diesel engines replace steam
	Visiting speaker if near railroad get official to discuss operation of railroad and answer questions,	

Sea and Steam	Teacher/pupil discussion	Discuss first steam powered ships - paddle wheels, screw propellers - why did the latter replace the former except rivers of the West (paddle wheel operates in shallower water, but more vulnerable in heavy seas, in war and difficult in docking) - what advantages followed the use of steam for propulsion, what disadvantages. - sketch paddle wheel steamer and early ocean going sail and steam combination. - danger of fire on wooden ships if constructed over 200' long or over 3000 tons. - builders turned to iron frame and wooden planks, and later to all metal construction (Great Eastern).
Art	Read about Brunel & the "Great Eastern", esp. cable laying in Atlantic	

The Internal Combustion Engine

	Teacher presentation and demonstration	What are the essential parts and principles of the gasoline and diesel engines. Sketch and explain cylinder, piston, spark plug, distributor, coil, carburettor, battery, crank-shaft, valves where applicable. If possible show gasoline and diesel engines in operation. What advantages does a I/C engine offer as compared with a steam engine (some reference to charcoal burning engines in Europe (1940-5) may be made. Discuss the principles of the Parsons turbine engine.
	Pupil reports and sketches	Sketch and report on ways in which the I/C engine has effected transportation by land and sea.
Art	Prepare mural and make reports in groups on Pioneers of flight	Investigate: Montgolfier (balloons) Zeppelin R 101 Leonardo Lilienthal Wright Bleriot
	Investigate & draw famous airplanes	Spad, Sopwith, S.E.5, Nieuport, Fokker, Spitfire, Me109, Ju87, Fortress, Zero, etc.
Science	Group reports and sketches	1. Investigate Whittle and other jet motors. - discuss VI jet pilotless bombers (1944) 2. On helicopters - Leonardo, Sikorsky, Bell - uses of helicopters and V.T.O., aircraft and hovercraft. 3. Rockets - work of Chinese, Congreave, Goddard, Von Braun - current rocket activities and space flights.

Teacher/class discussion

The effect of flight on travel, communication and war, e.g. Edmonton London = 8 hrs.
Edmonton - Ft.Chipewyan = 2 hrs.
in politics and business, meetings can be arranged anywhere in the world within 48 hours.
Discuss the advantages and disadvantages of freight by sea, road, rail, air.

COMMUNICATION IN MODERN TIMES

Group research & reports

Topic I
Investigate inventors related to print - newspapers
- postal services
- rotary press, typewriter, linotype, teletype.

Inventors & inventions related to sound.

Make a display of pictures of the instruments used with the names of inventors a biographical sketch and a time line

Telegraph (Morse)
How does it work, can one be made in class, can messages in Morse be used by the class?
Telephone (Bell)
Phonograph (Edison)
Radio (Marconi)
Television (Baird, Jenkins)

Report on the development of phonographs, motion pictures, tape recorders Telstar, satellites, radar.

PROBLEM IV

THE EFFECT OF MODERN TRANSPORTATION & COMMUNICATION ON MODERN SOCIETY

Should be approached through discussion either teacher/class or outside expert or parent

Topics for discussion -

What is the effect on family life - children tend to move away from parental home for work - helped by advertising in papers - people travel further for work and pleasure,

What is the effect on diet.

What is the effect on politics.
- newspaper often have party bias.
- television, newspapers and radio allow widespread appeals to electorate and also denunciations.
- internationally, events in one country are specially known in others secrecy is difficult to achieve - people become interested and involved in foreign affairs - public pressure may force action.

What is the effect on the individual
- standardized dress, speech, diets and other habits tend to be encouraged.

	Collect newspapers from various sources and compare coverage of same topic and preparation of space devoted to advertising, local news, national news, international news and editorial comments	- difficult to know truth from deceit since many points of view expressed in papers, radio television - necessary to discriminate.
English	Individual essays on the topics - make copies of Ptolemy's map, etc.	Discuss the navigational techniques of the ancients - in general rarely sailed out of sight of land - many galleys (e.g. (Greece) beached every night and wore out in less than five years. No compass, astrolabe or accurate chronometers to fix latitude and longtitude - no accurate maps.
Art	Make pictures or maps of notable voyages (e.g. Hanno) and battles (Salamis, Actium)	Read reports of Salamis from Herodotus, etc. and of the Punic/ Roman naval battles.
Communications	Teacher presentation Specimens available from this office	Collect specimens of different systems of writing - ideographs, alphabets, etc. English, Cyrillic, Persian, Hebrew, Hindi, Chinese, Cree syllabic, Eskimo syllabic. Trace the development of writing through pictogram (Egyptian, Chinese, Babylonian) ideograph syllabic and alphabet. (Use the Dept. publication "The Story of Communication" here) 1. What materials were used for writing - birch bark, papyrus (Egypt) ink, clay & squared reed (Babylon) brush & ink & paper (China) wax tablet & stylus (Rome), vellum, parchment. Which was most convenient - which most lasting? 2. What other ancient methods of communication exists or existed - a) sign language (Plains Indians) b) smoke signals (Plains Indians) c) Drums (Africa) d) Quipu (Peru) 3. How were ancient scripts deciphered generally by finding bilingual inscriptions (Rosetta & Moabite stones) or by reference to a similar language - Champollion (Minoan) (Persian) Rawlinson (Babylonian) Ventris (Egypt). - rapid changes in technology spread throughout the world affecting jobs, health, diet, clothing, etc.

Activities - Invite older residents to talk to children on conditions of travel and communication in their youth.

E N T E R P R I S E

VI (A)

ANCIENT EGYPT

E N T E R P R I S E

VI (A)

ANCIENT EGYPT

OBJECTIVES

1. To trace the rise of a civilization from Neolithic times to the stage where a complex, highly organized civilization had evolved noting the environmental factors that may have contributed to such growth.

2. To examine the cultural advances that contributed to or stemmed from the advancing civilization of Egypt.

3. To note the factors that contributed to the decline of Egypt about 1200 B.C.

UNDERSTANDINGS

1. That advances in science, the arts, religious organization, the law, are based on a surplus of food and wealth.

2. The government of an empire depends on control of the economy and the rise of a bureaucracy which requires good communications and permanent records.

3. That in an advanced civilization specialization of labour is a prerequisite of major cultural advances.

DESIRABLE SKILLS

Increased ability to:-

(a) understand the causes of climate and its effect on housing, dress and agriculture,

(b) understand the social background underlying the development of arithmetic (sales, taxation), surveying, astronomy (predicting depth of the Nile, length of the year, etc.), writing (in law, instructions to governors, taxes, etc.),

(c) increased skill in map drawing, use of atlases and reference books, and ability to take independent notes and write them up in an acceptable form.

OVERVIEW

This unit should be helpful to all children in that they are born into a complex highly organized civilization without any perception of how a civilization begins, and how the various arts and sciences developed as a response to social needs. The major emphasis should be on the conditions which promote the growth of the sciences and arts in Egypt and of the way in which these skills were employed. This is not to imply that a deterministic point of view should predominate. The Department of Education publication "Ancient Egypt" may be of some help.

MOTIVATION

Pictures of the pyramids, of the deserts, and of the cities and people of Egypt should stimulate interest and questions such as:

Why were the pyramids built?

How old are they?

Why is there so much barren sand?

Why do people dress in such a manner?

How is a camel suited to the climate of Egypt?

Why do the houses have flat roofs?

all of which offer leads into the topic.

EVALUATION

Grade 6 children are amply capable of writing independent notes and essays which should be graded. Objective tests on core material discussed or presented at whole class instruction periods should be given at intervals. Individual or group projects should not be read to the class, but written up and put on display. Such work should not be formally graded, though it may be praised or criticized (preferably by the class, not the teacher).

TOPIC I

The physical setting.

Related questions

1. Where is Egypt?
2. What is the main river? Where do its branches rise? How long is it? When does it flood and why?
3. What is the annual rainfall and how is it distributed throughout the year?
4. What are the monthly mean temperatures? What is the annual range in temperature?
5. What kind of vegetation can be expected to grow in these conditions without irrigation?
6. Which area of Egypt could originally be expected to be the most fertile (the delta) and why?
7. What wild animals lived here in Ancient Egypt? Which still survive?
8. Which domesticated animals originated in Egypt, and which have since been introduced later?
9. What minerals were found in or near Egypt? copper, iron, tin, etc.

TOPIC II

The beginning of an organized state.

1. What was the condition of man in 5 - 10,000 B.C.? How did he obtain food and clothing; what tools did he use, how did he make fire, how did he defend himself from wild animals?
2. What conditions would attract man to the Nile valley? -abundance of water, large numbers of game animals - antelope, geese, ducks, other birds, hippopotamus, fish, etc. and plant foods to be gathered or collected.
3. How could man have begun to domesticate wild cereals? By noting that seeds dropped in one spot grew into mature plants, hence the land could be cleared and planted.

TOPIC II - cont'd

4. What effect did this have on nomadic hunters? Growing plants had to be protected from grazing animals and hence the crop had to be guarded during the growing season, leading to peasant villages being built near the fields - food supplies were now more assured (though grains were supplemented by hunting) and hence famine was less rife and the population grew.
5. What crops were grown and how were they cooked? What myths grew up about plant germination and growth - Earth Mother, Cults, Osiris myth.
6. How could the domestication of animals have proceeded?
   - most game animals are gregarious and live in herds.
   - the canyons and clefts into the rocks at the side of the valley, if fenced at the front would permit animals to be corralled in a suitably sized area and killed with more ease than if they were at large.
   - being accustomed to the presence of man the animals would become progressively tamed or even regarded as pets.
   - in time the animals would be used for wool, milk and labour as well as for meat - animals involved were antelope, pigs, cows, goats, sheep, later camels and horses - ducks, geese could be caught in moult and kept safely by cutting off the flight feathers from one wing to prevent escape
7. Why was the fertility of the land not reduced by continual cropping - fertile mud deposited by floods annually.
8. As population grew, the naturally flooded ground must have been all taken up . How could more land be profitably used? - by irrigation.

TOPIC II - continued

9. Could irrigation canals be dug by individuals - could groups do this unless they had a leader? Could villages lying behind each other be allowed to open sluices or close them at will. (The argument is that cooperative central direction and a system of rules (law) must be involved in large scale irrigation projects).
10. What devices were used to move water- gates, canals, shaduf
11. If the land floods, and the soil is silt how are farmers to locate the limit of their fields? (Introduce surveying as a means of locating boundaries).
12. How could the smelting of copper have been discovered - must have been accidental since the ores of copper do not look like a metal - rocks containing copper possibly used as a windbreak around fire, or fire lighted on ore outcrops - in moring beads of copper found in the ashes - process repeated deliberately - copper ores found mainly in Sinai peninsula.
13. What uses were made of copper - beads, jewelery, weapons - describe pouring molten metal into shaped moulds for casting.
14. What advantages do copper weapons have over those of flint or fire hardened wood.

TOPIC III

Imperial Egypt

1. When were the Upper and Lower Kingdoms united? How did the Pharoah's headdress symbolize this union?
2. The Pharoah was head of the state and head of the priestly hierarchy. Why were the priestly caste so revered - they alone were able to write and read the difficult ideographs (hieroglyphics) which took years of study.

TOPIC III - cont'd

- they were supposed to be on more intimate terms with the gods than ordinary man and hence could threaten with supernatural punishments.
- priests collectively owned great acreages and were exempt from taxation.
- they had knowledge of arts and sciences which was not available to common people.

3. What were the religious beliefs of the Egyptians?
   - in origin, animistic nature worship with animal cults or fetishes.
   - amulets and charms enlisted supernatural help.
   - personal life after death and judgement involving mummification and goods to be used in after life.
   - the dead Pharoah immediately became a god.
   - bodies of Pharoahs - great nobles preserved in mastabas (step pyramids) which later developed into pyramids.

Writing

1. What advantages does a written system of communication hold for the government of an empire?
   - accuracy of the record - not distorted in transmission.
   - permanence of the record
   - ease of transmission - the message does not depend on the memory or education of the deliverer.
   - accessibility - records of past decisions and information can be retrieved without recourse to the persons involved.
   - how did the writing system of Egypt develop? Does a given sign represent an idea, a syllable, or a letter of an alphabet?
   - what materials were used in writing.
   - did the writings undergo changes
   - how was this writing translated in modern times?

TOPIC III cont'd

Arts and Sciences

Astronomy

1. How would astronomy enable the priests to forecast the Nile floods?
2. How was the length of a year determined?
3. How was the calendar organized?
4. How was time measured? Water clocks, sun dials.

Mathematics

1. How did mathematics develop - from need for measuring grain, laying out buildings, taxation.
2. How did the Egyptians multiply 144 by 5? (only multiplication used was doubling)
3. How did they write fractions? (only with 1 as the numerator)

   e.g. $\frac{3}{4}$ $\frac{1}{2}$ $\frac{1}{4}$
4. Did they count in tens? Why? How else could they have counted? (Duo decimal or binary systems)
5. How did they calculate the area of a circle? $(\frac{7D^2}{8})$ How accurate is this?

Medicine

1. What practices were used in medicine?
   - mixture of practical medicine and magico-medical spells.
2. Surgery better based because of experience in operations of mummification.

Stone working

1. What tools were used to cut and shape stone?
   - used copper or wooden saws with abrasives
   - chisel and wedges
   - pounding surfaces with hard rock balls to smooth
   - bow drill used to perforate
2. What use was made of stone?
   - pyramids, statues, jewelry, pots, architecture.
3. How were the pyramids built?
   - what architectural forms were used?
     e.g. at Karnak

Metal work

1. What metals were used in Ancient Egypt?
   - copper from Sinai - in earliest times
   - bronze about 1900 B.C. (tin ores scarce)

TOPIC III cont'd

2. What techniques were used?
- casting in clay moulds, soldering, cloisonne work, repousse work (like copper tooling), cold hammering.

Food and Clothing

1. What were the staple foods?
Poor Classes - bread, broad beans, onions, leeks, garlic, radishes, melons, cucumber, lentils, peas, lettuce, figs, grapes, dates, meat of ducks, goats, sheep, fish.
Nobles - more meat including game
Both classes drank barley beer, nobles additionally had wine.

Clothing

Typical costume was kilt or loincloth of linen, in Old Kingdom women wore long linen dress trailing to ankles and supported by wide shoulder straps. Bead collars worn by both sexes - as were wigs - heads were shaven to avoid lice and for coolness.

Farming

1. How and where were the fields ploughed?
2. What form did the plough have?
3. What animals were used in ploughing?
4. How was grain harvested?
5. How was the grain separated -
trod out by animals, winnowed by wind.
6. How was grain stored.
7. Who owned the land?
8. What fraction of the crop was taken for taxes? (1/7 of yield).
9. What were the taxes used for?

Housing

1. What were the houses of the poor made of?
2. What shape were they and why?
3. How were they furnished?
4. What were the nobles' country houses made of? (mud and brick)
5. What facilities did they contain?
6. What pets were kept?
7. What toys were available for children?
8. What recreation did adults enjoy?

TOPIC III cont'd

War

1. What is the difference between a militia man and a professional soldier?
2. Which is likely to be more effective? Why?
3. When are militia available for service? (after harvest - must cultivate in growing season)
4. When are professional soldiers available? - all year round.
5. Militia men can support themselves in a local short campaign. Who supports, professionals? (supported by taxation or private resources)
6. What were the weapons of the Old Kingdom? - battle axes, spears, clubs, bows and arrows, used scaling ladders, picks and shovels to attack cities. Shields large, round topped made of dried skin. After 1500 B.C. laminated composite bow used and war chariot introduced for Western Asia. Defensive armour of leather with metal scales used in this period.
7. Against whom did the Egyptians fight?
8. Since iron ore was scarce in Egypt, would this affect efficiency in fighting with armies who had iron swords, axes, spear heads?
9. Who were the great Egyptian Conquerors?

TOPIC IV

The decline of Egypt

After 1200 B.C. the Egyptian Empire declined as more vigorous empires armed with iron weapons dominated the scene.

1. Which empire rose between 1200 A.D. and 30 B.C. to eclipse and attach Egypt? (Hittites, Libyans, Sea people (Phoenicians), Assyrians, Persians, Macedonians, Romans)
2. What are the signs of decline of an empire?
   - division of empire into antonomous units, civil war, decline in architecture, art, etc., use of foreign troops. revolts in army, problems of succession.

TOPIC IV continued

The decline of Egypt

3. How did Egypt fall into the hands of Macedonian rulers?
4. What signs of the past greatness of Egypt are still on view?
5. What important contributions to knowledge were made by Egyptians?
   - architecture, masonry, books, paper, art, geometry, the calendar, surgery, etc.

PROBLEM I

THE PHYSICAL SETTING

Subject Area	Suggested Organization	Suggested Activities
Handwork	Group Activity Tasks are cutting the board delineating features, modelling, painting.	Prepare asbestos clay or plaster of Paris map of the Nile Valley on base 4' x 2'. Model hills, mountains. Colour the deserts brown, irrigated areas or wet lands green, blue rivers, and sea. Indicate cataracts. Data on this map can be filled in as the enterprise proceeds.
Social Studies	Individual Work	Prepare mimeographed base maps of Nile Valley and near East to the number of 3 per pupil. 1. for natural features. 2. for centres of interest - Memphis, Karnak, Thebes, Babylon, etc. 3. for movement of people - invasions, etc. 4. Prepare graphs of temperature and rainfall.
	Group Work	Prepare a mural exhibit on wild life of the Nile Valley, show lion, hippo, crocodile, hyena, jackal, antelopes, geese, ducks, perch etc. show changes of fauna from North to South.
	Teach presentation	Discuss the climate of Egypt, the vegetation and the causes of the Nile flooding - record data on maps.

PROBLEM II

THE BEGINNINGS OF AN ORGANIZED STATE

Subject Area	Possible Organization	Possible Activities
History	Teacher acts as consultant to group activities	Organize into groups: 1st group - Draw and report on how man hunted and trapped animals, birds, fish in Late Stone Age. 2nd group - Draw and report on Stone Age tools - flint chipping, axes, scrapers, wooden spears, fire hardened or flint tips - methods of attaching head to spear - make samples and throw to establish range, accuracy.
Social Studies	Group Work on daily life in Egypt.	Group: 1. Draw and collect pictures of specimens of Egyptian food. 2. Draw and color pictures of clothing of Egyptians - was it suited to the climate?

PROBLEM II continued

Social Studies (continued)		3. Draw and comment on Egyptian farm methods as compared with those of today. Illustrate sowing, reaping, winnowing.
	These pictures could be incorporated into a large mural or model	4. Draw or model Egyptian palaces, temples and houses with utensils pets and children.
		5. Draw pictures of the Egyptian soldiers at war. Discuss the defensive armour and weapons.
	Group reports or individual projects	Report on great figures of Egypt, including Moses, Tutankhamen, Ramses II, Thutmose.

PROBLEM III

IMPERIAL EGYPT

Subject Area	Possible Organization	Possible Activities
Art, Social Studies, English	Group Activities	1. Report on and draw sketches of the Gods of Egypt, discuss Art styles in Egypt and copy.
		2. Report on mummification and burial of the Pharoahs.
		3. Report on law and punishment in Egypt.
		4. Report on Egypt - the size, method of construction and purpose of the Pyramids.
		5. Report on the trial of theSoul after death as believed by the Egyptians.
	Teacher presentation	Discuss the materials used in writing by the Egyptians, and the development of writing in Egypt. Show Egyptian sound values for signs.
	Pupils try some rebus writing - merely translate English sentences by substitution of Egyptian signs results will not be Egyptian but might be interesting.	6. Discuss use of writing in a civilization as highly organized as Egypt.
Science	Teacher presentation	Discuss how, from the appearance of the stars in given location, the length of a year can be estimated. Also by counting number of days between annual crests of the Nile, average period will be one year. Discuss and demonstrate if possible the use of sun dials and water clocks.

PROBLEM III Continued

Mathematics — Teacher Presentation

Demonstrate Egyptian numbers.
Demonstrate technique of multiplying.

e.g. 17 x 9 ≃ 17 x 2 — 34
doubled ≃ 17 x 4 ≃ — 68
doubled again ≃ 17 x 8 — 136
add 17 x 1 — 17

add last two — 153

Writing fractions

$\frac{5}{8} \simeq \frac{1}{2} \quad \frac{1}{8}$

$\frac{7}{16} \quad \frac{1}{4} \quad \frac{1}{8} \quad \frac{1}{16}$

Calculate area of circle by Egyptian formula A $\frac{7D^2}{8}$ with advanced children.

PROBLEM IV

THE DECLINE OF EGYPT

Subject Area	Possible Organization	Possible Activities
History	Teacher presentation	Discuss briefly the other peoples of the middle east and their relations to Egypt. Use pupil maps to illustrate invasions with dates. Discuss the signs of decline, civil wars, separatist movements, decline in public works, architecture, art, use of foreign mercenaries to preserve order, etc. Discuss the contribution of Egypt to civilization and survey briefly the present condition of Egypt.

Culmination - present models, pictures and have authors answer questions posed by class. Display work to parents or other pupils.

E N T E R P R I S E

GRADE VI (B)

CANADIAN PRIMARY INDUSTRIES

AND

CONSERVATION OF RESOURCES

ENTERPRISE

GRADE VI (B)

CANADIAN PRIMARY INDUSTRIES
AND

CONSERVATION OF RESOURCES

OBJECTIVES

1. To develop an awareness of the natural resources which are the basis of Canadian propserity.

2. To foster a knowledge of extraction methods relating to primary industries and the related secondary industries.

3. To develop an understanding of the economic reasons for the population distributions in Canada.

UNDERSTANDINGS

1. That Canada is well endowed with a wide variety of natural resources.

2. That many of these resources are non-renewable and that conservation can extend the profitable use of them.

3. That Canada's primary resources support a wide variety of industries which account in large part for the diversity of Canadian regional development.

4. That technology relating to extraction, processing and remanufacture of primary resources is changing rapidly and requiring more complex skills.

5. That birds, animals, fish, insects, plants, etc. exist in a balance with certain natural conditions.

DESIRABLE SKILLS

1. To draw and use maps with an understanding of contours, isotherms, isohyetal lines, scales, etc.

2. To prepare graphs of quantitative data.

3. To write coherent reasoned essays and reports based on observed fact or references.

4. To work independently and in groups toward a common goal.

OVERVIEW

This enterprise is concerned with the location of Canadian natural resources, with a description of extractive and manufacturing methods, with the effect of these natural resources on the distribution of the Canadian population; with the conservation of these resources, and with the opportunities for employment in these industries for young people in given areas. The natural resources discussed in this outline will be:

- agriculture (wheat farming)
- ranching (in Alberta)
- mining (for coal, iron, gold)
- fishing (for salmon and halibut in B.C.)
- logging (in B.C.)
- trapping (in Northern Canada)
- game animals
- oil and gas resources (with some reference to the Oil Sands)
- (water may be treated as a mineral instead of coal)

The approach should be in a high degree visual - through maps, charts diagrams and photographs. Conservation as a topic will summarize and review the unit.

MOTIVATION

A comparison of income per capita in various countries might spark a discussion as to reasons. Pictures of loggers, fishermen, miners might provoke an interest in what is being done.

A population map of Canada might encourage questions as to why so many people live in certain areas and what they do to earn a living.

TOPIC I

What are the primary industries of Canada

Related Questions

1. Define primary industries and those industries which are concerned with the extraction, collection and production of raw materials without any previous process intervening.

   e.g. farming, ranching, fishing, logging, mining, trapping, hunting. Can be classed as those concerned with animal, mineral and vegetable resources.

2. On what conditions do primary industries relating to animals depend?

   (a) ranching - grassland, soil, rainfall, temperature, access to markets.
   (b) trapping - land unsuited to other economic use, temperature, vegetation, food resources.
   (c) fishing - depth of water, salinity, cold currents, pollution, plankton, concentration of fish in economic quantities, spawning areas, etc.
   (d) hunting - land unsuited to other use, usually poor soils or rugged terrain distant from dense population, food resources available.

3. On what conditions do primary industry connected with minerals depend?

   (a) metallic ores usually found in igneous formations - Canadian Shield, Coast Range, etc.
   (b) coal and oil found in sedimentary formations - Rocky Mountains, plains, Maritimes.
   (c) Building stone, sand, gravel, etc. may be in either formation.
   (d) on what conditions do primary industries connected with vegetable resources depend?
   (e) grain farming - flat land, preferably black earths, growing season of 100 plus day free from frost, about 20" rain, though dry farming techniques may utilize less than 20", access to markets.
   (f) Logging - land unsuited to other crops by reason of poor soils, rugged terrain, low or high rainfall. Pulp wood usually in east, B.C. most important for lumber - heavy growth of fir, spruce, cedar, hemlock caused by rainfall of 60" annually.

TOPIC II

Primary Industries based on animals

A) Ranching - the beef industry in Alberta

1. Why is Alberta the main beef producing province in Canada (Ontario has more cattle than Alberta, but many are dairy cattle).
   Reasons - has land too dry for farming but suited to grazing - influence of Chinooks in keeping feed accessible in winter.
2. Which are the predominant beef types of cattle.
3. What is the average size of cattle ranches?
4. At what age and weight are beef cattle sold?
5. Under what conditions - climate, shelter, feed, do they thrive best?
6. Where are Alberta cattle fattened and on what?
7. Where are these cattle sold?
8. What is the life of a cattleman like?

TOPIC II continued

9. What equipment is needed to rear cattle?

B) Trapping

1. What numbers of wild pelts are sold in Canada yearly?
2. Which are the most common?
3. Which are the most valuable?
4. What animals are trapped locally?
5. What is a registered trap line - why are they registered?
6. Can all animals be trapped all through the year?
7. What methods are used in trapping various animals?
8. How are the skins prepared?
9. To whom are they sold?
10. What use is made of them?
11. How do prices compare with those of ranch reared animals?
12. Are the prices steady from year to year?
13. Are the animals found in the same numbers each year or is there a cycle in the number?

C) Fishing - Off the British Columbia coast

1. Which fish are caught off the B.C. coast - salmon (5 types), cod, halibut, herring, etc.

Salmon

2. What is the life history of a salmon?
3. Where and when are salmon caught?
4. What methods are used, - seines, trolling, gill nets.
5. How long is the season?
6. What restrictions govern the size of the catch, e.g. length, depth and mesh size of nets.
7. How are the fish treated after catching?
8. To whom are they sold?
9. What are the fish used for?
10. What is the value of the catch?
11. Can anybody be a commercial fisherman?

Halibut

1. What does a halibut look like?
2. What size does it grow to?
3. Where and when are they caught?
4. What methods are employed to catch them?
5. How are the halibut treated after being caught?

TOPIC II continued

6. Where are they sold and for what price?
7. When is the open season?
8. Are all sizes legally catchable?
9. What use is made of the fish?

Herring

1. How big are herring?
2. Do they swim near the surface or at the
3. When and where are they caught?
4. What methods are employed?
5. Where are they sold and for what price?
6. What are the herring used for?

D) Hunting

1. Where are the following animals hunted - moose, deer, bear, elk, mountain sheep, mountain goat, rabbit, geese, ducks, pheasants, buffalo.
2. What do these animals look like?
3. In what numbers are they shot yearly?
4. What equipment is used in hunting each animal - how much does it cost?
5. What is the technique used?
6. What use is made of the animal when shot?
7. What size "head" is the record when applicable?
8. Are there any restrictions on age, sex or time of hunting?
9. Is a license required?
10. Are the animals increasing or decreasing? Why?
11. Are the animals dangerous?

TOPIC III

Primary Industries
Connected with minerals

(coal)(Nova Scotia)

In questions 3 - 14

Study one coal mine

1. Where is coal mined in Canada?
2. In what quantities is it mined?
3. Of what is coal composed?
4. How old is coal?
5. Why is it buried so deeply?
6. What are the different kinds of coal? (peat, lignite, bituminous, anthracite)
7. Why is coal not found in igneous rocks?

TOPIC III continued

8. How thick are the seams?

9. What machines are used to extract it?

10. What stops the pressure collapsing the galleries?

11. How is the coal raised to the surface?

12 What use are made of coal?

13 What are the hazards of coal mining?

14. What uses of coal have now been substantially taken over by other products?

(gold)

1. Where is gold mined in Canada?

2. What is the difference between placer gold and lode gold?

3. Which are the leading gold producing provinces?

Study one

gold

mine

4. Is gold associated with igneous or sedimentary rocks?

5. What tools are used in mining gold?

6. How is gold extracted from the impurities when the ore is crushed?

Questions

4 - 10

7. What is the value of gold today?

8. Who buys gold in Canada?

9. What is it used for?

10. Why is gold so valuable - is it scarce - has it some unique qualities?

(iron)

1. Where is iron mined in Canada - Quebec, Labrador, Ontario, B.C.

2. In what forms is iron ore found - taconite, magnetitie, limonite, etc.

3. In what kind of rock formation is it found?

4. Which province mines most iron?

Study one

iron mine

in Labrador

for questions 5 - 12

5. What kind of ore is mined in Labrador?

6. Is it near the surface or deep underground?

7. What machines are used to extract the ore?

8. Where is the ore smelted?

9. What materials and processes are used in smelting?

10. Why is the ore moved to the coke rather than the reverse?

11. What is the difference between iron and steel?

12. What industries are the chief consumers of iron?

TOPIC III continued

(oil)

1. Which provinces produce oil and natural gas and in what quantities?
2. Is oil associated with igneous or sedimentary rocks? Why?

In questions 1 - 11 refer to the Athabasca Tar Sands

3. How is oil formed?
4. What rock formations are needed for oil to be trapped underground?
5. How is the oil located from the surface?
6. How is the bore hole drilled?
7. How many dry holes are drilled on the average for one producing well?
8. How is the oil brought to the surface?
9. What techniques are used to add to the oil recovery?
10. How are well fires put out?
11. How is oil transported to the refinery?
12. Where are the refineries in Alberta
13. What are the products of the fractional distillation of oil?
14. What is oil used for?

TOPIC IV

Primary industries based on vegetation.

(logging on the west coast of B.C.)

1. Which province leads in production of (a) pulp (b) lumber? Why?
2. What types of tree are suited to (a) pulp (b) lumber?
3. What sizes do Douglas fir, Spruce, Cedar grow in B.C.
4. What is the terrain like?
5. How are trees cut down?
6. How are the logs moved to a cold deck pile?
7. How are the trees loaded onto trucks?
8. How are they unloaded into the sea?
9. How are they moved to the mill?
10. How are the logs measured?
11. How are the logs sawn.
12. What kind of saws are used?
13. What is the value of the wood?

TOPIC IV continued

14. Where is it used and for what purposes?

15. What provisions are made for reforestation?

16. What is a "tree farm license"?

17. What pests and hazards threaten the forests of Canada?

(Wheat Farming in Manitoba)

1. Which province produces most wheat?

2. What kind of terrain, soil, rainfall, temperature is best for wheat?

3. What are the chief breeds of Canadian wheat?

4. What is the average size of a wheat farm?

5. What machinery is used to prepare the soil?

6. How is the wheat drilled?

7. What weeds, pests threaten the wheat?

8. How are these controlled?

9. How long does wheat take to ripen?

10. How is the wheat harvested?

11. What are the details of the combining process?

12. Where is the wheat sold?

13. What is the Wheat Marketing Board?

14. What is crop insurance?

15. What is the sale price of wheat?

16. What is the wheat used for and to what countries is it exported?

TOPIC V

Conservation of Primary Resources

1. What are the techniques of conservation relating to scarce minerals -

(a) in general, to mix poor ores with rich ores to arrive at an economic mix without this poor ores would not be used.

(b) To substitute common metals for scarce metals where possible - aluminum instead of tin.

(c) To reclaim scrap.

(d) In oil wells, to repressurize, flood with water, control rate of extraction, etc.

(e) Water - prevent dumping of noxious effluents, garbage, etc.; stored by dams, reservoirs, convert water now wasted, prevent excessive demands on wells (California) cutting down on excess use in droughts.

2. What are the techniques of conservation of wild animals and fish life?

   (a) Control of catch by regulating open season, age, sex, size, area where catch permitted, licensing, protection and extension of spawning, size of nets, absolute protection, regulating population to food available, control of disease by inoculation, etc. selective breeding for increased survival, etc.

3. Conservation of soil.

   (a) Erosion occurs in wet hilly areas and dry windy areas.

   (b) Suitability of crops to steepness in hilly areas - trees and bushes very steep, close rooted crops less steep, open planting only on level - use of contour ploughing, etc.
   - on dry level land - retain stubble in fall, use of shelter belts, cover crops, etc.
   - prevention of gullying by dams, cover crops, kudzu vine, etc.

4. Conservation of forested areas -

   (a) against fire by closing woods in hot dry days, building access roads, fire fighting equipment, bulldozers, water bombers.

   (b) Providing for re-seeding or selective logging.

   (c) Better utilization of logs - reduce waste.

   (d) Use of by-products - bark, sawdust, etc.

   (e) burning of slash to permit reseeding by natural means.

   (f) Logging overmature stands to encourage regeneration.

   (g) Tree breeding stations to develop strains which reach marketable size in shorter time.

5. Conservation of human resources -
   (Main primary resource of Canada) by:

   (a) education

   (b) retraining of redundant workers

   (c) medical, dental care

   (d) adequate diet, housing, clothing.

   (e) Use of machines to free men's time, etc.

PROBLEM I

THE NATURAL RESOURCES OF CANADA

Subject Area	Possible Organization	Possible Activities
Geography	Group Activities	Prepare outline maps of North America on cardboard c 3' x 2'. On each outline superimpose. a) Climatic data - rainfall over 40", less than 20", 100 days free from frost line. b) Geological data - Pre-Cambrian rocks, Sedimentary rocks, mountain areas. c) Vegetation map - west coast marine forests, tall grass and short grass prairie, taiga, tundra, deciduous broad leaf forest. d) Animals associated with each vegetation zone - moose, deer, cariboo, musk ox.
Economics	Teacher Presentation	Discuss economic resources associated with climate, geology and vegetation. Thus: 40"+ rainfall and mild weather = forest (B.C.) 20" + rain, flat land, Sedimentary rock = ranching Igneous rocks = mining for metals Sedimentary rocks = coal, oil, limestone, gravel etc.
	Class discussion	Having established the primary activities associated with certain physical conditions, class may select a number for more intensive study for the following: a) Ranching b) Grain Farming c) Oil and gas or coal d) Metal Mining - iron, gold, lead/zinc e) Logging f) Fishing or trapping Units should refer to the whole of Canada, not just to the local scene. Though the local industries should be the starting point and model for other investigations.

PROBLEM II

PRIMARY INDUSTRIES BASED ON ANIMAL LIFE

Subject Area	Possible Organization	Possible Activities
Art, Nature Study	Group Work	1. From appropriate references establish the kinds of fish caught in B.C. waters

	Each group to produce a) Cardboard life-size cut-out in colour of each species. b) A life history c) An article on methods of catching fish d) Use made of fish - human food, oils, fertilizer, pet food, etc.	- Salmon (cohoe, pink, chinook, dog, humpback) - halibut - cod (ling) - herring - halibut
English	Teacher Presentation	2. Readings from books by Roderick - Haig - Brown on fishing off the B.C. coast might give pupils some insight into atmosphere. "Salt Water Summer" is recommended here for Salmon fishing background.
Mathematics	Teacher Presentation	3. Class prepare graphs to illustrate: a) The relative value of each type of fish, or alternatively lbs. of fish landed in given years. b) Value of fishing industry in B.C. economy.
Biology	Visiting expert -invite local fish & game officer to class	4. Discuss the problems of conservation-licensing, closed seasons, mesh size of nets, weight of fish landed.
Social Studies	Teacher Presentation	Summarize briefly importance, methods of fishing in other parts of Canada.

Since the class selection of topics is rather wide, no attempt is made to suggest activities for all. Briefly, provision should be made for manual work, group and individual research, map and graph techniques, and report writing by all pupils. Reference should be made where possible to actual logging, fishing, mining operation and free materials sought from companies involved in such activities.

ENTERPRISE

GRADE VI (C)

LIFE IN COASTAL REGIONS

Compare Indian Life on the British Columbia Coast with that of the Maoris in New Zealand.

ENTERPRISE

GRADE VI (C)

Life in Coastal Regions. Compare Indians in the B.C. coast with Maoris of New Zealand.

OBJECTIVES

1. To develop an awareness of the adjustments of other ethnic minorities to an increasingly technically oriented society.

2. To diminish a sense of "Separateness" in Indian and Metis Students by studying other peoples with similar problems.

3. To foster knowledge of the effect of proximity to an ocean on climate, vegetation and economy.

UNDERSTANDING

1. A knowledge of the history and development of native people in New Zealand and British Columbia.

2. A knowledge of the utilization of natural resources by native peoples in New Zealand and British Columbia.

3. A knowledge of problems faced by these native peoples in modern times, and their success in overcoming them.

4. A sense of what attitudes and reactions are involved in the successful co-existence of minority and majority ethnic groups.

DESIRABLE SKILLS

Increased ability to:

(a) Understand the geomorphology of coast lines.
(b) Understand and interpret contour lines.
(c) Read and utilize maps and atlases.
(d) Use isotherms and isobars.
(e) Prepare graphs of climatic and other data.
(f) Understand the principle of the "survival of the fittest", in terms of plants and animal life (related to introduction of exotic plants and animals in New Zealand).

OVERVIEW

This enterprise is concerned with the adaption of native peoples to a particular environment and with their reactions to a dominant and alien culture which overtook them.

MOTIVATION

The triangle of Indian, Maori and European should be of natural interest to the children. Suitable pictures may be obtained from the B.C. Department of Indian Affairs, Legislative Building, Victoria, B.C. and from the Consulate of New Zealand, Ottawa, Ontario.

EVALUATION

A grade VI class is capable of writing periodic tests and essays on the common core of learning. Marks should also be assigned for participation in group work, and for individual projects.

The following list of topics and related questions may offer a possible avenue of investigation.

TOPIC I

The physical setting

Related questions

1. Between what latitudes, north and south of the equator, do British Columbia and New Zealand lie?

2. The west coast of New Zealand and of British Columbia have fiord coast-lines- what is a fiord; how is it formed?

3. Both S. Island of New Zealand and British Columbia have glaciers, now receding, and glaciated topography. What are the physical signs of glaciation in mountain regions?

   - U-shaped valleys, morains, hanging valleys, etc.

4. British Columbia's west coast is formed of intrusive batholiths. New Zealand (North Island) is largely formed of block mountains. South island exhibits volcanic activity - volcanoes, lava, pumice, geysers. What are these features, and how are they formed?

5. British Columbia coasts have heavy rainfall (80 - 220 inches) as do parts of New Zealand. What causes this heavy rainfall?

   How does the climate of Aukland, Canterbury, Vancouver, Victoria, compare with that of Edmonton in temperature and rainfall? What differences are caused by being south of the equator?

6. How does the natural vegetation of B.C. and New Zealand compare?

7. What birds, animals and fish are endemic in New Zealand and B.C. and what use did the native population make of these?

8. How can the peculiar flora and fauna of New Zealand be accounted for?

9. What animals, birds, fish have been successfully introduced into New Zealand? (moose, deer, rainbow trout, etc.)

TOPIC II

The Native peoples

1. What do they look like?

2. Where did they come from?

3. In what locations did they settle?

4. What did they eat?

5. How did they dress?

6. How did they build?

7. What tools did they use?

8. What was the annual cycle of activity?

9. How were they organized for war and peace?

10. What were their relations with other people- in war and trade?

TOPIC II continued

11. How did they travel?

12. Had they the use of metals, the wheel, pottery, etc. i.e. what stage had their economy reached in European times - that of the Stone Age, Bronze Age or what?

TOPIC III

The Impact of European Settlement

1. Who was the first European to sight British Columbia. (Juan Perez)

2. When did the Spaniards first effect a settlement, and for what purpose? Why were Spaniards first in the area?

3. Which European first sighted New Zealand (Abel Tasman).
What was he doing there?

4. When were the first settlements by Europeans established in New Zealand and for what purpose?
(base for whaling, sealing, trading with Maories for provisions, lumber in exchange for muskets, rum, trade goods).

5. When did organized settlement in New Zealand being and under what circumstances?

6. When did the British oust the Spaniards from B.C.?

7. Who was the first man to reach the B.C. coast by land? (Mackenzie)

8. Where did the Hudson Bay Co. set up forts in B.C.?

9. What discovery brought mass migration of Europeans to B.C.? (gold rush)

10. When did B.C. become a Crown Colony?

11. B.C. had no real Indian wars, while New Zealand had several armed uprisings by the Maoris. What caused these wars and how was the conflict resolved?

12. Was any treaty with the B.C. coastal Indians signed by the Crown? Did the B.C. Indians "own" B.C.? Did the Maoris "own" New Zealand?

    Was their dispossession unjust or just? Or was it merely inevitable?

13. During the 19th century and early 20th century, the numbers of the native population of B.C. and New Zealand declined dramatically. For what reason?

TOPIC IV

The Maoris and B.C. Indians today

1. Define "citizen" and "ward of the government".

2. Define "private ownership" and define "communal ownership".

TOPIC IV continued

3. How do these definitions apply to Indians - Maoris, and their traditional system of land tenure?

4. What is a "reserve" - on what basis is its size and location defined in B.C.?

5. Most B.C. reserves are on the coast, at the mouths of rivers. Why is this?

6. How do most B.C. Indians now earn their living?

7. The New Zealand Maoris were essentially agriculturalists, growing yams, taro roots, etc. Why did they not live primarily on fish? (no salmon run in New Zealand).

8. Why did not the B.C. Indians grow crops instead of just collecting berries and roots?
(labour of cleaning the coastal evergreen forests, lack of suitable crops, generally leached podsol soils, no tradition of farming - even now agriculture, except for some cattle, not a notable feature of the B.C. coast except for the Fraser Valley lowlands).

9. What are the present chief economic activities of the Maori - farming - sheep and dairying (butter, milk, cheese, etc.) with financial assistance and training for government; and industrial apprenticeship schemes - Maoris increasingly urbanized.

10. What are chief economic activities of B.C. Indians - salmon, halibut, herring, cod, clam, fishing canneries, logging, fruit and berry picking, sales of lumber on reserves, rental of sites for lumber mills.

11. What difficulties do Indians and Maoris experience economically, socially, educationally and culturally in finding an acceptable and accepted status in present society. Should they find a place or remain outside the majority society? What are the prospects of these courses of action?

PROBLEM I

The physical setting

Subject Area	Possible Organization	Possible Activities
Social Studies	Group Projects	1. On 2 suitable sheets of plywood, say 4' by 2' prepare outline maps of New Zealand and B.C. and make contour models using flour and salt mixture, or asbestos clay. Allow to dry, colour lowlands green, highlands brown, water blue. Group Tasks are: 1. Cutting plywood 2. Outlining maps 3. Mixing relief materials 4. Colouring 5. Indicating longitude and latitude major river, oceans, mountain ranges, straights, cities. The relief maps should be related to the world maps or globes.
	Individual pupil work	2. Locate and name for each country/ province: (a) most northerly latitude (b) most southerly latitude (c) most westerly longtitude (d) most easterly longitude (e) highest mountain (f) longest river (g) Capital city, etc.
		3. Prepare rainfall and temperature charts for Aukland and Victoria, Christchurch and Vancouver. Edmonton (as a local comparison)

Required Data

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE
Aukland temperature	66	66	64	61	56	53	51	52	58	57	60	63	59
Aukland rainfall	3.1	3.7	3.2	3.8	5.0	5.4	5.7	4.6	4.0	4.0	3.5	3.1	
Victoria temperature	39	42	45	49	54	57	60	60	57	52	45	41	50
Victoria rainfall	4.1	3.1	2.2	1.2	1.0	0.9	0.5	0.7	1.3	2.9	3.6	4.8	
Christchurch Temperature	61	61	58	53	48	43	42	44	48	53	56	60	52
Christchurch Rainfall	2.2	1.7	1.9	1.9	2.6	2.6	2.7	1.9	1.8	1.7	1.9	2.2	
Vancouver temperature	39	40	44	50	56	61	64	64	59	52	44	40	51
Vancouver rainfall	7.9	6.0	5.3	3.6	2.7	2.1	1.4	1.6	3.2	6.6	6.9	9.5	
Edmonton temperature	8	11	23	40	52	58	63	60	51	41	24	12	37
Edmonton rainfall	.9	.8	.9	1.1	1.8	3.0	3.1	2.3	1.2	.8	.9	.9	

PROBLEM I continued

	Pupil investigation	Which is the hottest month in each location? Which is the coldest? Which is the wettest? Which is the driest? Why are the temperature graphs for New Zealand so unlike those of B.C. in general shape.
Science	Teach discussion and demonstration	4. Why do mountain areas generally receive more rain than lowland areas. Demonstrate with cans of cold and warm water that cold air holds less moisture than hot air by observing condensation on cold objects in appropriate circumstances. - mountain tops are colder than lowlands adjacent - show by photos of snow capped peaks.
Geology	Teacher presentation	Discuss glaciation, its effect on topography, formation of fiords - make contour sketches of fiord coast on spirit master. Show pupils how to make cross sectional drawings from contour lines. Discuss and sketch formation of sedimentary and igneous rocks - formation of block mountains, folded mountains, volcanic activity - lava, pumice, geysers,
Science	Class picture collection	Collect pictures of natural vegetation of B.C. and New Zealand Kauri pine, Douglas fir, tree ferns, etc. Collect or draw pictures of:

B.C.	N.Z.
moose	kiwi, moas
black-tailed deer	geckos
black bear	penguin
grizzly bear	tuatara
beaver	(no mammals other than bats are endemic)
Pacific salmon	(moose, deer, rainbow trout introduced from N.America)
	(deer multiplied so fast that commercial hunters employed to kill them)

Science	Teacher discussion	Mammalian evolution and the isolation of N.Z. and Australia should be mentioned in accounting for the primitive forms of animal life in N.Z.

PROBLEM II

The Native Peoples

Social Studies	Teacher presentation	On map Pacific indicate (1) migration routes of B.C. Indians from Asia over Bering Strait down the Pacific coast of B.C. (2) migration routes of Maoris from S.E. Asia via Tahiti to N.Z. Refer to modes of travel - possibly (B.C.) Indians by skin covered canoe or dug out, Maoris by outrigger canoes lashed parallel to each other and decked over.

PROBLEM II continued

Social Studies	Pupils map work	On maps of B.C., N. Zealand locate the areas controlled by various tribes
Art	Pupil sketches	Sketch Maori and Coastal Indians dress -

Maori	Coastal Indian
flax skirts	sea otter skins
cloaks of bird feathers	cedar bark woven after shredding with wool from mountain goat into cloth, spruce roots

Draw tools other objects

Tools (both used no metals)

Clubs, stone adze	Adze, spear, chisels
Cloaks of bird feathers	wedges, harpoons, clubs, bows & arrows, nets, hooks

Food

Essays - "Hunting the Whale", etc.

yams, sweet potato	oolichan, herring,
nuts, roots	halibut, shellfish -
shellfish, fish	(clams and oysters)
eels	sea urchins, roots,
(cannibals)	berries (collected, not cultivated.)

Pupils sketches

Buildings

Both built wooden houses splitting planks from the tree by use of wedges and mauls. B. C. Indians used cedar extensively as it splits readily and resists rot. Both peoples decorated houses by carvings.
Refer to tikis and totem poles.

Art — Make totem poles of dried whole apples stuck on a slender stick - carve and paint. "tiki" is common to Peru and to Polynesia - read "Kon Tiki" for theory of colonization from S. America.

Sociology — Teacher presentation

Discuss social organization of Maoris.
- tribes made up of related families
- descended from common ancestor
- chieftainship descended by primogeniture
- slaves (prisoners of war) did menial work - communal life - not family based
- land held in common - men tilled soil women weeded.
- importance of "tapu" (tabu) associated with personal property of chief, with death, etc.

B.C. Indians

Tribes also based on hereditary rank graded from aristocratic chiefs to slaves who performed menial tasks. Houses were communal, villages permanent but in summer tribes moved along coast for deep sea fishing and inland for hunting.

PROBLEM II continued

Nootka Indians hunted whales with harpoons.
Discuss "potlatch" as a means of obtaining social prestige.
Secret societies using carved masks active.
Some raiding by war parties up and down coast for goods and slaves -
Haida Indians from Queen Charlotte Islands most feared - made long ocean voyages in huge dug out cedar canoes.

TOPIC III

The Impact of European Settlement

Subject Area	Possible Organization	Possible Activities
History	Group reports	Prepare maps and reports on: N.Z.: Abel Tasman; James Cook; Gibbon Wakefield; Treaty of Waitangi; The Maori Wars B.C.: Juan Perez; Captain Cook; Bering; Baronov; John Meares; Vancouver; Mackenzie; James Douglas; The B.C. Gold Rush
	Teacher led discussion	Why did Europeans settle in N.Z. and B.C. N.Z.: agrigulture depression in U.K.; timber; good soil & climate; sheep and wool; N.Z. prosperity dependent on use of refrigerated ships for mutton and dairy products B.C.: furs; gold; timber; salmon (canning); ranching; B.C. prosperity dependent on C.P.R. railroad and shipping for sale of lumber
	Discussion	Deterioration of status of native people. In both B.C. and NZ land was taken unjustly from natives either by force or by unfair methods of purchase. B.C. Indians did not use land for agriculture hence had little use for large tracts of land. Reserves made near mouths of salmon rivers. The commercial activities in B.C. and N.Z. were such that the native peoples had no part in them until recently - logging, salmon canning, mining were European ventures except for some casual labor. In B.C. labour was often imported - Chinese, Japanese, East Indians.
Health	School Nurse	Discuss inherited and acquired resistance to measles, influenza, small pox, T.B. and effect on native peoples. - transmission of disease and modern remedial measures - inoculation, vaccination, anti-biotics, etc.

TOPIC III continued

Civics		Discuss the status of Indians and Metis under the Federal and Provincial govt. Define "citizen", "ward of government"; reasons for Indians not being considered full citizens - why? Advantages and disadvantages of Indians status regarding taxation, loans, votes, self government. Maoris are citizens with parliamentary represenation and full rights, why is this? Possibly because - Maoris highly intelligent of superb physique, successfully fought off regular troops in war over land - Britain pulled troops out of N.Z. to force settlers/ Maoris to come to terms on basis of equality. Maoris still able to obtain government grants for training in industry and agriculture.
Social Studies	Group Reports murals, sketches	How do the Maoris and B.C. Indians earn their living today? N.Z. sheep farming making butter making cheese whaling in Antarctic waters B.C. Salmon fishing Halibut fishing Logging fruit & berries tourist products basket work, Cowichan sweaters, totem poles
Class project		Make charts and graphs illustrating the imports and exports of B.C. and N.Z. both by product, value and country of origin or destination.

ENTERPRISE OUTLINE

Grade VI (D)

The Contributions of Science to Social Progress in North America

The original outline for this unit was drafted by the staff of Mistassiniy Junion High School

ENTERPRISE

GRADE VI (D)

The Contributions of Science to Social Progress in North America

OBJECTIVES:

1. To show that progress comes about by the application of scientific research to practical problems.

2. To show that industrial progress is directly concerned with the replacement of animal energy by chemical or electrical energy.

3. To show that mankind now lives longer and more comfortably than in the past.

4. To show that education and training are the keys to future material progress in North America.

UNDERSTANDINGS:

1. A broad but not detailed understanding of general progress in medicine, production techniques, power utilization, agriculture, transportation and communications in North America.

2. A general understanding of the scientific method.

3. A general knowledge of possible future advances in various scientific fields.

DESIRABLE SKILLS

1. Increased ability to:

   (a) Report individual or group investigations both orally and in essay form.

   (b) Locate information in reference books and other sources.

   (c) Understand the principles of gasoline powered engines and simple machinery.

   (d) Accept that material progress depends on dissatisfaction with present status.

OVERVIEW:

This enterprise is of a survey nature and is not especially concerned with details, but with principles. Much use should be made of simple experiments such as demonstrating that mechanical energy can be converted into electrical energy and vice versa, that fertilizer effects the growth of plants, that linear motion (pistons) can be converted to rotary motion (drive shafts).

The course is envisaged as being based on demonstration of principles - reproducing as far as possible original experiments of great researchers.

MOTIVATION

Describe a medical operation before the use of anaesthetics or antiseptics.

Describe the travels of historic northern explorers, from the point of view of Scurvy, disease and difficulties of travel. Describe lighting and heating in schools 100 years ago. By question and answer establish conditions today and ask how and by whose efforts conditions have changed.

EVALUATION

Evaluation should be on the basis of class knowledge of basic principles, rather than on names and dates.

Recognition should be given for individual and group efforts at the time such work is completed.

The fields discussed in this outline will be those of:

Medicine, agriculture, power and its application to industry, transportation, communication, space exploration, conservation of resources and education.

Others may be added, or topics may be omitted as is required by the local situation.

The following list of topics and related questions may offer a possible line of investigation:

Topic	Related Questions
1. Progress in medicine since AD1800	1. Why were amputations, internal operations and childbirth so dangerous in the early 18th century?
	2. What caused this high mortality?
	3. Who established that bacteria are responsible for many illnesses, and infection is reduced by certain methods?
	4. What are inoculations and vaccinations, and which diseases do they help control?
	5. Why did doctors in the 18th century pride themselves in removing legs in less than one minute (pain).
	6. Discuss early anaesthetics - rum, opium, etc. and the introduction of NO_2, ether, chloroform, morphine, novocaine, etc.
	7. How did X-rays affect surgery.
	8. What are antibiotics.
	9. How can hearts be operated on if a wound there is usually followed by death? (heart-lung machines)
Progress in Public Health	10. What are vitamins and what is their importance in diet.
	11. How is water purified for drinking?
	12. Why are plagues no longer prevalent?
	13. Why are foods inspected before sale?
	14. How are foods preserved and how does this effect diet?
	15. What are the expectations of life now compared with 100 years ago?

16. What are the chief killing diseases now (circulatory disease, cancer) and what is being done to reduce their causes.

2. Progress in agriculture since AD 1800

1. How were grains sown, harvested and processed in AD 1800?
2. How can grain seeds be sown mechanically?
3. How can grain stems be cut mechanically?
4. How can the seeds be collected mechanically.
5. How do scientists breed better plants?
6. What chemical combinations affect the growth of plants?
7. How are grains milled, enriched and otherwise processed now as compared with AD1800?
8. How are plant diseases or pests controlled now?
9. How is soil erosion controlled now?
10. What is crop insurance and who pays for it?

3. Power and its application in industry

1. What are the oldest forms of power - muscle, wind, water.
2. What additional sources are now available - chemical (coal, oil, gas) electrical, atomic power.
3. What is electrical energy and by what means is it generated and used?
   - storage batteries
   - dynamo
   - hydro-electricity
   - steam, etc.
4. How is chemical energy converted to mechanical energy
   - coal
   - gasoline)
   - diesel) engines
   - gas)
5. How is this power applied to machines economically?
   (a) Introduction of factory system as opposed to cottage industry.
   (b) Job specialization and standardization of parts.
   (c) Instantly available - replaces expensive muscle power - can be switched off when not required does not require feeding when idle.
   (d) Discuss one production system thoroughly - car industry for example -

- raw materials - iron, water, coal nickel, oil, copper, rubber, plastics, etc.
- transportation - ships, trucks, conveyer belts, etc.
- assembly line technique
- automation
- skills and wages of workers.

TOPIC IV

Progress in transportation (land)

1. How fast could men and goods move by land in 1800 AD by horseback or by cart or stagecoach?
2. How did railroads develop?
3. How did automobiles develop?
4. How did tracked vehicles develop?
5. How did hovercraft, powered sleds, etc. develop?

By Sea

1. What advantages does a steam powered vessel have over a sailing vessel - can proceed in opposing winds or without winds - arrival can be predicted.
2. Why did the screw propeller succeed the paddle wheel? - not exposed to damage ease of docking, not so easily disabled in warships .
3. What advantage does oil firing have over coal firing for ships?
4. What is the average time for Atlantic crossings now compared with 1850?
5. How do I/C engines in boats affect travel, work and supplies in the North now?

By Air

1. What different methods of travel by air are available
   - lighter than air machines (balloons, dirigibles)
   - heavier than air machines (plane, helicopter)
   - unpowered machines (gliders)
2. On what principle do heavier than air machines fly?
3. Who pioneered aerial flight?
4. What are the principles of rocket and their potential development?
5. What sort of goods are carried economically by plane?
6. What are the respective fields of usage for:
   land travel - train, car, truck
   sea travel
   air travel
   and what sort of facilities does each require?

TOPIC IV continued

7. What are the disadvantages of each mode of transport?

TOPIC V

Communications since 1800

1. How did men communicate messages, news in 1800 AD?
   - semaphor, heliograph, smoke signals, letters, stage coach or by accidental travellers.
2. On what principle does the telegraph work?
3. What is the Morse code?
4. How does the telephone work?
5. How does radio work?
6. How does T.V. work?
7. How do printing machines work?
8. When was the typewriter invented?

TOPIC VI

Conservation of Resources

1. What are renewable resources?
   wild life, mankind, crops, forests, water power, etc,
   What are non-renewable resources?
   ores, fossil, fuels.
2. Which non-renewable resources are scarce? and by which methods can they be conserved?
3. Which renewable resources are not being used to our best advantage?
4. What appropriate remedial measures can be taken?
5. For which scarce resources can cheaper substitutes be employed?
6. How are human beings being wasted - by unemployment, illness, etc. and what remedial means are or can be devised - vocational education, counselling, retraining, etc.
7. What fields of work are now rapidly being uneconomic or superfluous?
8. What are the implications of automation?
9. What attitudes of pupils toward education should be encouraged?

PROBLEM I

Progress in Medicine since 1800AD

Subject Area	Possible Organization	Possible Pupil Activities
Health	Presentation	Describe verbally or through eye witness reports. (a) an amputation AD 1800 (b) the Plague of London (c) the Black Death (d) By question establish that such scenes do not occur now.
English	Pupil Reports	Have any pupil who has had teeth extracted, tonsils removed or appendectomy, describe the procedure ask repeatedly what was the purpose of various steps. - washing - antiseptic dressings - anaesthetics - injections of antibiotics, etc.
	Group research and report	Report on work of: Semmelweiss in Vienna Lister (antiseptic surgery) Pasteur (bacteria) Fleming (penicillin) Leuwanhoek (microscope) Salk (polio vaccine) Jenner (small pox) etc.
Science	Experiments	1. Place moist bread in an open container and watch moulds appear. 2. Place dry toast in a vacuum and see if decay occurs. 3. Place meat outside the classroom in freezing temperature or in a refrigerator, and another piece in the classroom. Conclusions - That moist meat and bread are attacked by moulds or bacteria and decay. That decay proceeds quickest in warm moist surroundings. That microscopic forms of life exist in the air. Display pictures of various bacilli responsible for disease. Streptococci, etc.
Health	School Nurse	Discuss active and passive immunization against various diseases. - have her display specimens of x-ray plates of broken bones; discuss value of x-rays.

TOPIC II

Progress in Public Health

Subject Area	Possible Organization	Possible Procedure
Health Geology	Teacher presentation	Discussion of pure water - danger of contamination where many people live close together. - sewage, garbage disposal. - wells contaminated by surface drainage. - proper siting of wells - use of chemicals - chlorine, etc. to purify drinking water. - examine water system of school, if there is provision for chlorination. Discuss the water borne diseases, - typhoid, cholera; remedial measures.
English	Teacher led discussion and pupil notes or essay	How are foods preserved 1. How long will meat stay fresh? 2. How long will bread stay fresh? 3. How long will milk stay fresh? How can decay be halted? (a) by salting (bacon) sugaring (jams) drying (meat, fish) canning freezing pickling - vegetables irradiation vacuum packing
	Teacher led discussion	(a) Animal borne diseases. Which diseases can you get from animals? rabies - read about Pasteur Tuberculosis - from milk or meat Trichinosis - uncooked port Tularemia - rabbits discuss government inspection of meats - show government mark on beef.
	Teacher reading "Journal of the Plague" of London or Pepys Diary	Plagues - Black Death, Great Plague of London - control of rats by cleanliness, rats proofing houses, poison traps. Yellow fever or Malaria - antpheles mosquito controlled by D.D.T. oiling breeding areas. Some reference could be made to vitamin and mineral deficiency diseases. Scurby, beri-beri, goitre, rickets and their prevention.

TOPIC II

Progress in agriculture since AD 1800

Subject area	Possible Organization	Possible Procedure
Social Studies	Teacher led discussion	Pose the following questions - (a) Why do people grow crops instead of hunting? Direct answers leading to:- 1. Land sown to crops yields more food than when devoted to animal pasturage. 2. Yield is more predictable than hunting. (b) On what factors does good crop yield depend? ANSWERS: 1. On acreage cultivated per man 2. On condition of soil. 3. On available plant food. - nitrogen, potassium, phosphorus, water, sun. 4. By selection of good seeds. (c) How have the factors in (b) above been altered in the last 150 years? ANSWERS: Use of machinery. (a) A man can dig 1/4 acre daily A horse can plough 2 acres daily 1 tractor can plough 20 acres daily (b) A man using a sickle can cut 1/2 acre wheat daily. (c) How does a combine harvester work? Illustrate by drawing simplified mechanism?
Experiments		1. Plant quick growing seeds e.g. radishes in - 1) sand 2) sand and balanced fertilizer 3) sand and fertilizer and many seeds 4) sand & fertilizer and spaced seeds. Establish that fertilizer provides necessary elements for growth, if not overcrowded - how seed drills work. Other experiments as needed to illustrate effects of water, light, acid soils, alkaline soils, etc.
Teacher led discussion or reading about Saunders & Wheat		How are better plants bred - discuss selection and fertilization of wheat - preparations of various varieties.
Experiment		By insecticides at the store - spray insects and watch effects.

	Mural	Draw harmful insects, note why they are harmful. List ways of combatting them.
	Discussion	Mention irradiation of male flies in lab to control warble flies - matings are sterile
Social Studies	Teacher presentation	Illustrate effects of soil erosion in dry and windy, or in wet & hilly areas by pictures or films refer to: windbreaks, dry farming, contour ploughing, use of cover crops, gully control, etc. as remedial measures.

TOPIC III

Power and its application to Industry

Subject Area	Possible Organization	Possible procedure
Science	Teacher directed inquiry	1. What are the power sources of the pre-industrial era (a) muscle power-man-animal (b) water wheel (c) windmill Draw these on a large mural on a time scale Leave room for addition of modern sources) 2. How was wind and water power applied to useful work - discuss use of cogs, etc. to turn power at right angles for use in saw mills, flour mills, metal forgings. 3. What alternative sources of power arisen in recent times (by chronology) (a) steam engine (18th centry) depends on expansive power of steam driving pistons. (b) Gasoline engine, dependent on explosion forces of gasoline when ignited driving pistons. (c) Diesel power - dependent on explosive burning of oil ignited by compression in cylinders. (d) Electrical motors convert mechanical energy to electrical by principle of repulsion of like poles of magnetism. (Illustrate by making a simple motor - the small motor supplied in plastic boat or plane kits are entirely suitable) Refer to the generation of electricity by hydro, gasoline, steam power. (e) Turbine development by Parsons - principle of hot expanding gases impinging on vanes (as in a windmill) and developing rotary motion. (f) Atomic power - principle same as steam turbine engine - heat vaporizes a liquid and expands to drive turbines.

Add suitable diagrams to the time-line mural.

4. How is this power applied economically to industry?

Establish that -

(a) Power for industry is most economically used in large quantities at one site - this involves work in factories, not in the workers' homes, it involves workers starting and finishing work together not as they wish.

(b) The complexity of modern assembly require that each man specialize in one aspect of work, and not each man completing the whole; on the work being brought to the worker (assembly line), not on the worker going to the job.

(c) Machines are cheaper than muscle power because:

i) they can be switched on and off as needed.

ii) They do not tire or become sick or late for work.

iii) they work much more rapidly than human fingers and in general much more accurately so that parts are interchangeable.

Refer if necessary to Whitney and his musket factory where all parts were standardized and interchangeable (c1790)

5. Discuss, with pictures or films the productive system of a large factory; the automobile industry is ideal and material is readily available free.

Refer to -

(a) the raw materials needed - iron ore, coal, water, copper, plastics, cloth, oil, limestone, etc.
(b) Extraction methods of above.
(c) Transportation of above - by ship, truck, conveyer, belt, pipeline, etc.
(d) Assembly line technique.
(e) Automation
(f) Skills and wages of employees
(g) Marketing.

TOPIC IV

Progress in Transportation since 1800 AD

Subject Area	Possible Organization	Possible Procedure
Social Studies	Introduction Teacher reading	
Art		
Time line mural chart in these strips Land, Sea, Air		1. Read extracts re transportation in ancient times, e.g. Cicero bought an olive press 50 B.C. transporting it

		20 miles cost more than the press. Extracts from journals of Mackenzie, Frazer, etc. would help pupils envisage time, difficulties of travel.
		2. On time chart draw man carrying pack, dog team, horse riding, chariot, carts, stagecoach at appropriate points.
	Group Projects	Pupils investigate invention time of introduction of steam train, bicycle, first cars, motorcycle, diesel train, buses, tracked vehicles, power sleds, and report on them. Place sketch on mural. How fast do they travel? Are they confined to certain facilities, tracks, roads, garages, gas pumps?
By Sea	Group Projects	Pupils list various forms of ship or boat, place sketches on mural and write reports on; Rafts (Kon Tiki) Dug outs (West Coast) Canoes (Kayaks) Galleys Viking boats Galleon Battleship (Nelson) Clippers Paddlewheel Screw steamer Oil fired ships Outboard motors Submarines
	Discussion	What advantages do powered vessels have over sailing vessels. (a) Can proceed in opposing winds or without winds. (b) greater speed (c) predictability of arrival Why did screw driven boats succeed paddle driven boats - (a) screw not exposed to damage from stormy seas. (b) Ease of docking (c) Less easily disabled (warships) (d) Is about as effective for propulsion. Why did oil supercede coal for steam: (a) Oil applied by valves, not shovels, (b) Cleaner, more efficient weight for weight. (c) Oil can be loaded by pipe (d) Oil can be stored in any spare space and fed by pumps, etc.
	Discussion & report	How has the advent of power applied to water transportation affected travel and supplies in Northern Canada?

By Air

Science	Teacher reading	Read of an early pioneer's flight - Icarus, Leonardo de Vinci, Montgolfier, Lilienthal, Wright, Zeppelins, etc. to show difficulty of first experiments.
Art/Science	Group Projects	List, investigate, draw and report on. - <u>Lighter than air machines</u> - balloons dirigibles, blimps. <u>Heavier than air machines</u> - aeroplane (prop & jet) helicopter, autogyro, rockets. <u>Unpowered machines</u> -gliders - use in war, sport.
		Discuss principles of flight of planes by reference to air screw and shape of wing Bernoulli effect.
	Discussion	Discuss the principle of rocket by releasing inflated balloon, discuss present objectives and use in space and war, and possible future developments.
		What sort of goods are transported economically by plane. - low weight, high value, goods
	Discussion & report	What are the respective fields of usage and limitations of railroad - tied to tracks, bulk. car & truck - tied to roads. boats - slow, bulk cargoes. planes - tied to landing fields in cities. Helicopters - flexible but expensive

<u>TOPIC V</u>

Progress in Communications		Proceed in above lines - refer to - Semaphore, heliograph, smoke, codes,postal system, telegraph, telephone, radio, T.V., printing, teletype, typewriter, place in chronological formula - refer to principles of operation.

<u>TOPIC VI</u>

Science	Teacher led Discussion	1. What are the main resources of Canada?
		Divide into <u>renewable</u> resources, crops, soil, forests, water power, wild life, human resources. and <u>non-renewable</u> resources - ores, fossil, fuels.
		2. Which of these are scarce and how can they be conserved?
		3. For which resources are cheaper substitutes available? - plastics for tin cans. - cardboard for glass (milk), etc.
		4. Which resources are not yet fully developed?

5. Which renewable resources are not being used to our advantage -
   - refer to waste in logging.
   - extracting only richest ores
   - poor farming practices
   - unemployment, school drop outs retraining for people, sickness medical/dental/optical care.

6. Which fields of work are now becoming uneconomic or superfluous?

7. What are some implications of automation in terms of education and employment?

8. What attitudes toward education should be encouraged among pupils?

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GRADES III TO VI --

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